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PRESIDENTIAL ADDRESS*

The Practice of Military Medicine—Broadening Concepts

By

MAJOR GENERAL HAROLD H. TWITCHELL, USAF, MC

ON BEHALF of our organization, it is my pleasant duty to extend to each of you a very sincere welcome to this, the 66th Annual Convention of the Association of Military Surgeons of the United States. A special welcome is expressed to those of you who are attending in the capacity of Convention guests as distinguished representatives of the Military Services of nations other than our own. I feel certain that the actual exchange of contacts, both professional and social, will be of lasting benefit to all of us. It is my personal opinion that one of the greatest potentials for the development of world peace is an increased exchange of human relationships. I know of no better media of exchange than through the field of medicine. This large group of distinguished military medical representatives attending this meeting provides an excellent media for the exchange of medical concepts, a furtherance of the humanities, and thereby movement toward improved international friendship. I urge all of you to be cognizant of these objectives in your inter-relationships during this convention.

The theme selected for this year's meeting is—"The Practice of Military Medicine—Broadening Concepts." Such a theme is all encompassing. It permits a program that should be of interest to everyone, in spite of the present day trend to compartmentalize the ever enlarging knowledge of medicine into the various specialty fields. The necessity for specialization is recognized, but we as doctors, following the concept of our Hippocratic Oath must never lose sight of the requirement to treat man as a whole individual. Under the ever broadening situations in which the military man may find himself practicing medicine today, this is especially true. Subjects for discussion at our conventions of only a few years back, and well within the memory of many of us, dealt for a large part with transmission of infectious diseases and injuries resulting from tangible missile type objects traveling at understandable speeds. Today, we are well on the road to practical control of many of the infectious diseases. On the other hand, we are now reaching into new and relatively unexplored areas of physiological stresses of man that may well overtax his capability to carry out his assigned military mission whether he be operating in space, below the sea, or traveling at rates of speed which exceed the imaginative capabilities of most of us. The present

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day knowledge and immediate potential of new military weapons systems dictate that a broadening concept is the key to success in the practice of military medicine today. I believe you will find that the program has been planned with this broadening concept in mind.

I call your attention to a procedure of presentations that is being utilized for the first time in this organization, that is the use of television. We are all well acquainted with the tremendous advances made in television during the past years. This year, through the cooperation of Smith Kline and French Laboratories, we will bring to you a series of subjects that would have been impossible to present at a convention of this nature through other than the media of television. I am sure it will bring to you concepts in the present day practice of military medicine that will be most interesting and enlightening.

It would be redundant on my part to speak in detail of the many advances in medicine to which the military medical services have contributed so much over past years. To refresh our memory, I will mention only a few of the broad subjects in which military medicine has been a major contributor. The major proportion of the medical knowledge of gunshot wounds has been developed from experiences of military surgeons. The fundamental principles of transportation of sick and injured by land, sea, or air are based on experience with the military forces. Much of our broad knowledge of sanitation, especially for handling large numbers of people, stems from military activities. Original studies on transmission of typhoid fever and malaria accomplished by military medical men have led to the control of these major diseases. Today, our military physicians are among the leaders in the research of the ability of man to exist in the environment commonly called "Outer Space." We cannot, and must not, rest satisfied with these achievements. The Federal Medical Services, of which this organization is representative, must continually seek new methods of approach to medical problems that may ultimately result in assistance to mankind as a whole just as we have done in the past.

It is not new to state that we, as a nation, are prone to be lackadaisical in our viewpoint toward medical preparation for a potential period of wartime conflict. Everywhere we hear and read about the unbelievable casualty rate that will occur if a generalized war utilizing nuclear weapons should occur. As individuals, too many of us recognize the catastrophic situation that would result from a surprise attack on our nation. Typically, we as individuals do little or nothing about preparing for such an eventuality.

The Office of Civil and Defense Mobilization is continually pressing forward in its attempts to prepare the people of our nation to meet emergency but as individuals we remain lethargic and inattentive to the excellent advice and instructions being made available to us by that agency. I submit that we as individual members of the Association of Military Surgeons must take steps to stimulate within our respective departments and agencies, action to correct this deplorable lackadaisical attitude.

It is obvious that in any major accident situation where more than a very few individuals are involved, the immediate available medical facilities and professional personnel capabilities are overtaxed in spite of the many unusual individual personal sacrifices that are made. Disaster areas resulting from floods, tornadoes, and major fires repeatedly demonstrate the inability of the medical profession to provide immediate and complete care to each and every injured individual. It is almost impossible to conceive the casualties which will result from a single nuclear bomb explosion. Multiply this many times and the complete overwhelming of medical personnel and facilities becomes obvious. Medical care, as we now know it, immediately becomes a problem of insurmountable proportions.

It is recognized that the ability of each individual to provide limited self-care and similar care to others may be the greatest single lifesaving potential under such con-

ditions. This potential of saving lives is now being developed in the Office of Civil and Defense Mobilization and in our military establishments. The efforts in our military establishments are worthy of special mention at this meeting.

Under the guidance of the Department of Defense, the military services published a joint regulation on 5 November 1958 that established an Emergency Medical Care Program. The objective of this program was to develop "in being" medical resources essential to support the Armed Forces in the immediate disaster phase following a thermo-nuclear attack; as well as medical support capability for casualties and public health measures for disease control, during the initial attack period. This is to be accomplished primarily by training all non-medical personnel in First Aid procedures and then gradually expanding this basic capability. The program is divided into four phases. Phase I—Self Aid or Buddy Aid—Emergency care of themselves and others by non-medical personnel with no medical supervision; Phase II—Emergency Medical Care and Treatment—Same care as in Phase I but under limited professional supervision; Phase III—Post Attack Medical Support—Definitive professional care as circumstances permit; and, Phase IV—Post Attack Resupply of Medical Resources.

At the moment, I would like to address myself only to Phase I of the program—Self Aid or Buddy Aid. When this phase of our military program has been accomplished and nonmedical individuals are reasonably well qualified in Self and Buddy Aid, our military personnel will have made unbelievable progress toward individual self-preservation in any disaster situation, no matter what the causative factor may be. When Phase I has been accomplished, the other Phases will follow almost automatically due to the momentum of the Program.

It appears to me that although the official name of this organization is the Association of Military Surgeons, our component parts such as the personnel of the Veterans Administration, the Public Health Service, and Reserve, and National Guard members have relationships which can influence the interest of this Department of Defense concept of Self Aid and Buddy Aid in the civilian community. In case of any disaster, the need for such program among the civilian populations of this and other nations is just as important as it is in the military services.

I suggest that we as an organization, and as individuals, support the concept of Self and Buddy Aid as part of an Emergency Medical Care Program for the entire nation. It should not matter whether such a program is sponsored by the Department of Defense or the Office of Civil and Defense Mobilization. Cooperation and assistance by members of the military services to civilian groups can improve local community relationship. Such a program leads to a capability of self care by non-medical individuals that will save untold numbers of lives in any type of a disaster situation. Broadening the concept of Military Medicine along these lines presents a potential of medical progress that can be compared to the other major contributions that have been made by Military Medicine in the past and of which we spoke earlier.

I recommend to your particular attention a period during the television program when training aspects of Self Aid will be presented. There is also an exhibit of a training kit devised to provide instructors with an orderly and interesting capability to teach large numbers of individuals the basics of Self Aid.

It would be my earnest hope that each of us take home from this meeting an increased incentive to further all efforts, both military and civilian, to provide our nations with realistic Self Aid and Buddy Aid capability at the earliest possible time.

I cannot close my comments this morning without expressing public recognition to certain individuals for their efforts in the furtherance of this convention. During the entire year, I have been stationed with the United States Air Forces in Europe and have been unable to personally assume certain responsibilities that should normally fall

to the President of your organization. Your General Chairman, Colonel Aubrey L. Jennings; the Chairman of the Scientific Program Committee, Colonel Frank M. Townsend; and the Association Secretary-Editor, Colonel Robert E. Bitner, have assumed and carried out responsibilities far in excess of that normally expected of them. They have done this in a most willing and commendable manner. I take this opportunity to express my personal appreciation, and the appreciation of the organization, to each of them for a job "well done."

Further, I would like to thank our Sustaining Members and our Exhibitors whose continuing enthusiasm and interest have helped make this convention possible. I suggest you visit them personally at their display booths in the Exhibitors area.

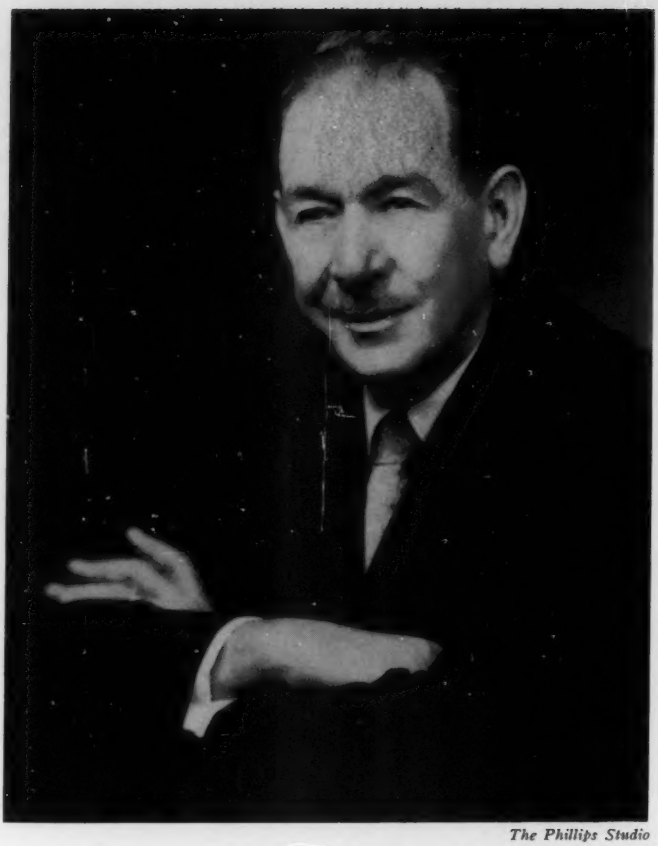
May I, in conclusion, repeat my welcome to this, the 1959 Convention of the Association of Military Surgeons. I sincerely hope you enjoy yourselves during the convention, and that as you leave, you feel the time away from your regular duties has been well spent.

PARTICIPANTS IN THE OPENING SESSION OF THE 66TH ANNUAL CONVENTION OF THE ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES—WASHINGTON, D.C., NOVEMBER 9-11, 1959. (REAR ADMIRAL WINCHELL CRAIG, PRESIDING)

U. S. Army Photo

First Row (L to R): Rear Adm. Winchell McK. Craig, MC, USNR, Ret. (*Special Assistant for Health & Medical Affairs to the Secretary of Health, Education, and Welfare. President, Assoc. Mil. Surg.—1953*). Maj. Gen. Harold H. Twitchell, USAF, MC (*President of the Association of Military Surgeons-U.S.,*—1959); Lt. Gen. Leonard D. Heaton (*The Surgeon General of the U. S. Army*).

2nd Row (L to R): Dr. Leroy E. Burney (*The Surgeon General of the U. S. Public Health Service. A Vice-Pres. Assoc. Mil. Surg.*); Major Gen. Oliver K. Niess (*The Surgeon General of the U. S. Air Force*); Dr. William S. Middleton (*The Chief Medical Director of the Veterans Administration. A Vice-Pres. Assoc. Mil. Surg.*); Rear Admiral Edward C. Kenney (*The Deputy Surgeon General of the U. S. Navy*).



The Phillips Studio

REAR ADMIRAL RICHARD A. KERN, MC, USNR, RET.

Our New President

REAR ADMIRAL RICHARD A. KERN, Medical Corps, U. S. Naval Reserve, Retired, became the 65th President of the Association of Military Surgeons of the United States on January 1. He was elected to the office by members of the Association during the 66th Annual Convention held last November in Washington, D.C.

Doctor Kern was born in Columbia, Pennsylvania, on February 20, 1891. He received his Bachelor of Arts degree in 1910, and his Doctor of Medicine degree in 1914 from the University of Pennsylvania. After his internship and residency at the Hospital of the University of Pennsylvania, he became a member of the staff as Ward Physician, as Chief of its Allergy Section, and as Chief of its Medical Outpatient Service. Shortly after the United States entered World War I Doctor Kern was commissioned a lieutenant in the Medical Corps of the U. S. Navy and served on active duty until October 16, 1919. Most of that time he was aboard the hospital ship USS *Solace*. After the war he returned to the University of Pennsylvania School of

Medicine where he was advanced, in 1934, to Professor of Clinical Medicine. In that capacity he served until November 1946 except for another tour of active duty with the U. S. Navy Medical Corps during World War II.

The Medical Specialist Unit #31 which Doctor Kern organized in 1935 reported to the Twelfth Naval District Headquarters at San Francisco and was assigned to the second USS *Solace* in February 1942. He served as Chief of Medicine until 1943 when he was assigned to the Staff of Admiral Halsey, Commander, South Pacific, as Clinical Advisor and Consultant. In March 1944 he became Chief of the Medical Service and Rehabilitation Officer at the U. S. Naval Hospital in Philadelphia where he attained the rank of Commodore (November 1945). He was released to inactive status in March 1946 at which time he resumed his duties at the University of Pennsylvania.

In November 1946, Doctor Kern became Professor of Medicine and Head of the Department in the School of Medicine at Temple University. This position he held until 1956 when he became Professor of Medicine Emeritus.

Doctor Kern was named Officer-in-Charge of the Volunteer Medical Division #4-3, U. S. Naval Reserve on November 18, 1947, a unit which was reactivated by the Bureau of Medicine and Surgery. Congress confirmed his nomination for Rear Admiral on July 30, 1953. On June 1, 1955, he was retired in that rank.

His interest in military medical matters has persisted through the years and he has been sent as Consultant by the Navy and the Army to many countries, chief of which were: Germany, Austria, Korea, Japan, Okinawa, the Philippines, and Egypt.

He holds honorary degrees of Doctor of Laws—Lebanon Valley College, and Doctor of Science—Franklin & Marshall College, Temple University, and Bucknell University.

Since 1951, Doctor Kern has been Chairman of the Committee on Naval Medical Research, Division of Medical Sciences, National Research Council. He was Chairman of the Panel on Shipboard and Submarine Medicine, Research and Development Board, Department of Defense. He is now Chairman of the Advisory Panel on Medical Sciences, Office of the Director of Research, Department of Defense, and a member of the Defense Science Board, Office of the Department of Defense. In 1951 he became a member of the Board of Honorary Civilian Consultants to the Surgeon General of the Navy, and in 1954, a member of the Board of Reserve Consultants to the Bureau of Medicine and Surgery of the Navy. In 1954 he was made Chairman of the Advisory Board to the Surgeon General of the Army by reason of his Presidency (1954) of the Society of Medical Consultants to the Armed Forces. He is a member of the Advisory Committee for the Care of Dependents of the Armed Forces, Health and Medical, Department of Defense, a member of the Armed Forces Epidemiological Board, and a member of the Naval Research Advisory Committee, Office of Naval Research.

Our Association is indeed fortunate to have at the helm a man of the stature of Admiral Kern to guide it through this year and through the 67th Annual Convention next fall.

The Practice of Military Medicine—Broadening Concepts*

By
LIEUTENANT GENERAL LEONARD D. HEATON
The Surgeon General of the U. S. Army

AS YOU know so very well, the Army works simultaneously on the problems of today, the problems of tomorrow, the problems of five years hence, and even of the more distant future. This is true today as it was true in the past. The difference is in emphasis. With the advance of the nuclear age and the increase in variety, range and lethality of weapons, the Army, and with it the Army Medical Service, is forced to radically reexamine and reevaluate its doctrine, organization, equipment, training, research and, in fact, every facet of its responsibility. The problems of the future demand and receive an increasingly higher degree of concentration and effort today than they have at any time in your or my previous experience. I assume that the choice of subject for this panel, "The Practice of Military Medicine—Broadening Concepts," reflects this concern with the future.

At this time of heavy emphasis on the future it is essential that we pause occasionally and view these time spans in their proper perspective and relationship to each other. It is important that we remind ourselves that the separation of planning activities into various time spans is only an administrative mechanism for the development of concepts and examination of problems. The fact is that the concepts and problems of today and those of the future are interdependent to a considerable degree. The solution of a problem today means not only that we have one less problem to solve tomorrow, but that we have a better basis and a better point of departure for developing more realistic concepts for tomorrow and for meeting the problems evolving from these concepts. Man has still not learned to visualize or shape the future on any other basis than the knowledge and experience of the past and the achievements of today. In short, our ability to support the Army of the future is in no small measure dependent upon the success we have in improving our capability to provide adequate medical support to today's Army. In this frame of reference, what are the more pressing problems facing the Army Medical Service today?

One continuing objective to which we have always devoted a good share of our efforts is to keep pace with the best in world medicine and, thus assure the highest standard of medical care to our troops and their dependents. It is essential that all elements contributing to the standard be kept in proper balance, and that any element lagging behind be provided proper emphasis so that it may catch up with the rest. We have made great strides in the professional care of our patients, which care, I believe, is second to none. However, we are not making the same progress in providing proper housing for our patients. We must accelerate the replacement of our outworn and outdated hospitals and other medical facilities. Only two modern dental clinics have been constructed since World War II. I intend to apply energetic effort to all elements of the construction program to assure a proper *modern* environment for the care and treatment of patients today and tomorrow.

The maintenance of a high standard of medical care requires constant evaluation and adaptation of the broadening concepts of the art and science of medicine to the needs of the military service. We are rapidly expanding our capability to do cardiac catheterization and open heart surgery. We are extending isotope clinics and pulmonary physiology testing to more and more treatment facilities of the Army. We are conducting an aggressive program to strengthen

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and modernize our patient facilities in consonance with changing concepts of medical care. We are expanding our education and training programs to support the new developments, both in the professional and strictly military areas. We have established a Department of Nursing at the Walter Reed Army Institute of Research to conduct research in nursing practice in contrast to prior emphasis on nursing administration and nursing education.

With the steady rise in the percentage of married men in the Army, and the corresponding increase in the number of dependents, the mental health of the serviceman's family has now assumed a position of importance that cannot be ignored. Emotional conflicts and problems within the family can interfere with the serviceman's effectiveness just as much as when they exist within his military unit. We have, therefore, established specialized training in child psychiatry at Walter Reed Army Hospital in affiliation with Children's Hospital of D.C., and it is anticipated that a similar program will soon be available at Letterman Army Hospital in affiliation with the Langley Porter Clinic. We are resorting more and more to the use of group therapy and are departing from traditional therapy methods by treating the family as a group or one parent and child together.

Furnishing preventive medicine services for the Army is one of the major responsibilities of the Army Medical Service. In dealing with the hazards from the environment Army medicine has, in its fairly brief span, passed through a great spectrum of experience from the purely physical and anatomical through the microbiological era and is now entering well into the phase of chemistry and ionizing radiation.

The problems of how best the Army Medical Service may help to evaluate and reduce radiation hazards from military and nonmilitary sources to our troops, is becoming of increasing importance. An extensive survey is now under way to determine our capabilities in this field and to draw a base line for further expansion of these capabilities. We are also exerting considerable effort toward identifying the hazards associated with fuels and oxidizers used in the Army's missile program. We are still seeking to identify the potential hazards attributed to microwave radiations (as yet ill defined). We are very much occupied with the problem of protecting personnel from harmful exposures to ionizing radiation in their work environment. Much time, effort and thought are being given to the definition and solution of problems related to the use of radioactive materials in weapons and material. The other great area of interest lies in the protection of personnel from the ill effects of the peaceful uses of radioactive materials.

I believe it is time to modify still further our traditional concepts in preventive medicine. To a great extent in the past, we of the medical service have considered preventive medicine largely a matter of the prevention of disease and disability. I believe the time has come to accept responsibility for going beyond this objective and develop the knowledge required to insure that not only is the military man free from disease and obvious disability, but that he is in the finest physical, mental, and emotional condition to perform his missions with the greatest possible efficiency.

The pentomic concept for Army divisions is not a matter of the future but a reality of today. Military preparedness for nuclear warfare is today's problem. It is a problem which we must resolve, and resolve now, in terms of our *current* knowledge and capabilities. Nevertheless, they involve broadening and sometimes radically broadening concepts for the Army Medical Service.

Our tacticians are continuously searching for strategic and tactical concepts with which to maximize the benefits of the tremendous technological advances in munitions, transportation, and communications. Each newly developed or revised concept requires an analysis of organizational requirements versus existing capabilities with the result that we are undergoing a continuous organizational evaluation. With each conceptual revision the Army Medical Service is faced

with the requirement to "stay in step" with the trend. This becomes increasingly difficult as our resources become diluted through decentralization, dispersion, and increased casualty estimates resulting from the tremendous lethality of modern munitions and the pinpoint accuracy of delivery means.

In the area of nuclear medicine, constant advances are being made in the research areas comprising casualty assessment in nuclear warfare, basic understanding of radiation pathology, and most encouraging results are unfolding in the preprotective chemical field against radiation sickness. Casualty assessment is the key to planning in nuclear warfare and is of vital importance to the commander in the field, to personnel, other technical services and to the medical department for determining patient load, medical supplies required and organization structure in the Active Army Medical Service. A working system will be forthcoming within the next six months.

Throughout this program of futuristic concepts, ideas, and plans we must continue an intensive program of training and maintenance of prepardness of our TOE Strategic Army Corps and Strategic Army Force medical units. These are the units which are available for employment today, and are those upon which we would be forced to rely immediately in the event of an emergency, limited or general.

Reorganization of the Army Medical Reserve forces in line with the overall reorganization of the Reserve structure commenced early this year and is now 93 percent completed. The purpose of this modification was to modernize the Reserve forces in line with the pentomic plan and to anticipate the concepts of the more mobile Army of the future. Just as the Active Army is subject to constant alteration to maintain pace with new concepts, so must the Reserve forces be so modernized. (As we are all part of the "One Army".)

As new concepts and new doctrine are developed we are incorporating them into our existing structure as rapidly as we possibly can. We are doing everything within our current means to reconstitute our field hospital assemblies to better support the current pentomic concept. Cognizant of the fact that our current medical means are insufficient to meet medical requirements resulting from nuclear attack, we are emphasizing training in self (buddy) care; also, the use of ancillary medical personnel *under professional supervision* to provide definitive treatment under such conditions. To support this concept we have established, in conjunction with our sister services, a Medical Material Program for Nuclear Casualties through which we preposition with troops emergency medical treatment units for use in case of nuclear attack.

Action has been initiated to develop and provide Veterinary field units the capability to detect and evaluate the amount of radioactivity in subsistence, so that the surgeon can be advised concerning the food's acceptability for consumption. This action includes the establishment of a research project in the Veterinary Division, Walter Reed Army Institute of Research, Walter Reed Army Medical Center, to develop techniques, procedures, and doctrine for the field examination of radioactively contaminated foods and recommendations for the development or modification of currently available detection equipment.

Veterinary field units are being revised to increase their capability to assist in the prevention of casualties resulting from the enemy use of CBR agents by reorganizing the internal structure of the unit to permit dispersed operation with a minimum of centralized control. This will permit the unit to place a zoonotic disease control plan into operation over a wide area, thus assisting the Army Medical Service in the early detection of zoonotic diseases which may be of biological warfare significance. In addition, personnel from these units will be available, on an area basis, to assist medical personnel in the care and management of mass casualties.

The area of Chemical, Biological, and Radiation Warfare presents a particular challenge to the Army Medical Service. In

World War II, Chemical Warfare existed as a real possibility and the Army Medical Service was prepared to assume treatment responsibility for gas casualties should they have occurred. Since World War II, there have been great changes in the Chemical Warfare picture. Exceedingly toxic agents have been discovered which act by alteration of body physiology, and treatment of which requires far more vigorous medical service activity than was envisioned with the older toxic chemicals. Moreover, in recent months, there has been increased emphasis upon so-called incapacitating chemicals, which also act by altering physiology, but in a more subtle manner than the lethal chemicals.

With the advent of emphasis on incapacitating chemicals and with increasing acceptance of biological warfare as an effective weapon system, the Army Medical Service is becoming increasingly involved in the Biological Warfare and Chemical Warfare Research Program. The major aspect of the research program consists of learning fundamental facts about chemicals and their pharmacological action, infectious disease agents and their relationship to man as a host, in terms of virulence, genetic properties, viability, stability, portals of entry, mode of action, pathology, and therapy. (Such basic knowledge is neither offensive or defensive. It is required both by agencies charged with the utilization of these agents as retaliatory weapons, and equally by agencies responsible for defense against these weapons systems.) The character of these agents and their mode of action on the human body is such that effective medical service participation is required if the fundamental research program is to be effective.

Paradoxically, as the medical services of the Navy and Air Force are progressing from aviation medicine to space medicine, it seems likely that the Army Medical Service must increase its interests and capabilities in aviation medicine with particular reference to the characteristics of Army aircraft and the military purposes for which they are used. Army aviation is growing rapidly. There are over 4,000 Army aviators on duty at this time and we now have 54 medical officers engaged in the practice of aviation medicine. Incidentally, there seems to be a possibility that men and material may be transported from place to place on the surface of the earth by means of ballistic rockets, and, if this develops into a reality, the Army Medical Service will be faced with the problem of protecting soldiers and medical material from the extreme forces of acceleration and deceleration which are characteristic of rocket flight.

The Army Medical Service has no existing research program directed primarily to space medicine, but does have in its Research and Development Program some activities which may be applicable—indeed, some activities which may be unique. The Army Medical Research and Development program is especially strong in the psychiatric and psychophysiological approaches to this field, and it seems possible that we may be called upon to make some contributions in this area. Also, the Army has a Nutrition Research Laboratory which is unique in the military services. It seems inevitable that nutrition problems will be most important in space medicine, and the Army Medical Service possesses unique capabilities for the required research in this particular subject. With our relatively minor capabilities we hope to make some contribution to space medicine research, but I bow to my colleagues on the panel for a much more complete discussion of the broadening concepts in this all important field.

Now for a bird's eye look into the more distant future. As the battle field becomes extended in width and depth to facilitate maximum maneuver and optimum passive defense against nuclear weapons through dispersion, the requirement for highly mobile units in the field army will increase. Vehicles to move patients, medical supplies, and medical units will undergo a gradual change in types, distribution, and capability. The trend will be toward an aerial line of communication so that by 1970 over 80 percent of medical support will move through the air via vertical take-off and landing

(VTOL) or short take-off and landing (STOL) aircraft; drones; and perhaps even by logistic missiles. Ground mobility for medical units may be expressed in flying platforms (more ground pressure vehicles); ambulances or aid stations contained in tracked armored personnel carriers; and other medical treatment facilities contained in expendable vans mounted on the new GOERS exoskeletal design cross-country vehicles. Small emergency medical teams or dispensaries may be flown to disaster scenes in pods attached to flying cranes. In order to obtain the optimum utilization of our limited resources in professional medical manpower we may have to modernize the country-doctor concepts and use aircraft to move medical officers on a daily circuit of their allotted units and employ radio communications to divert them from their routine when emergencies arise.

In the field of hospitalization in the combat zone we are attempting to solve a rather knotty conflict in requirements. In a hypermobile field army, with divisions, zones of action, and lines of communication constantly changing their combat orientation, there is an obvious requirement for a highly mobile field type hospitalization unit which can provide continuous support of divisions by rapidly relieving them of casualty loads and providing early resuscitative care. Since tactical dispositions may well be the same in non-nuclear war as they would be in nuclear war to offset the effect of surprise, this requirement for mobile hospital units is valid in either event. On the other hand, to preserve our scarce resources even in a "limited" nuclear war would indicate a requirement for protective emplacement or construction for hospital units. However, protection against flash, fallout, and blast appears to negate any effort to make field army hospital units 100 percent mobile in any form of transport. To adequately protect these combat zone units, the Army Medical Service and the Army Engineers are jointly considering the feasibility of digging-in hospitals with earth-covering equipment. The sides of the excavation and the floor for a ward might be sprayed with a quick-hardening plastic cement. The roof could be prefabricated, and made of flash and fall-out repellent material. Blowers might be developed which would neutralize toxic gases and condition the air in a manner akin to the currently available reversible household heat pumps which cool or heat the interior from the available heat in the exterior atmosphere. Small nuclear reactors may supply all the necessary power. It may be of interest to learn that the USAREUR Nuclear Medicine Research Detachment at Landstuhl, Germany, has already conducted field experiments with an Evacuation Hospital to determine the feasibility of protecting such units by employing earth-moving Engineer equipment.

Even more radical concepts are predicted for our CONUS hospitals. To read some of the proposals, the doctor and the nurse of the future will have little more to do than to sit in an easy chair and push buttons.

How much of this will actually materialize is anybody's guess. A few years back we would have considered these concepts only for use in science fiction. But, looking back upon the growing concepts of military medicine in the immediate past we realize that these advanced dreams represent no more radical concepts for military medicine than the actual developments of the last few years. One thing is certain—man cannot be wholly replaced. The successful practice of the art and science of medicine will still depend upon the professional knowledge and skill of the physician and his understanding and devotion to the patient.

The Practice of Medicine in the Navy*

By
REAR ADMIRAL EDWARD C. KENNEY
The Deputy Surgeon General of the U. S. Navy

DOCTOR CRAIG, members of the panel, officers and members of the Association, distinguished guests:

It is indeed a pleasure to have the opportunity to present some of the highlights and to discuss briefly a few aspects of the Practice of Medicine in the Navy before this distinguished group.

The Naval Medical Department now embraces every major branch of medical and paramedical treatment and research in the development of life saving and health restoring techniques. The Navy Medical Department will continue to extend its horizons as more engrossing challenges appear in the future in order that we may provide the best possible medical care for members of the Armed forces, retired personnel, their dependents and various types of supernumerary patients.

During the past few years many major advances have been made in the fields of medical research and clinical medicine and surgery, which have provided therapeutic methods capable of prolonging life and restoring health in conditions which were considered to be incurable only a few short years ago. In the past the art of the practice of medicine was a comparatively simple task for the practicing physician even though his hours were long and his job was often trying and difficult. With the newer, more complicated, and more effective methods of treatment the problem has become much more complex. Current therapeutic procedures often require the concerted efforts of a well-trained and highly specialized medical team, consisting of physicians, nurses, biophysicists, various medical allied scientists, electronics experts, and many others. Inadequate training or improper performance on the part of any one member of the medical team may result in a failure in the therapeutic effectiveness of the team. A single weak link in this chain may well result in a catastrophic termination for the patient. An outstanding example of this type of teamwork is in the field of open heart surgery which is currently being performed in many of our hospitals throughout the country. Because of the efforts of these highly trained teams many patients are now being restored to essentially normal ways of life, whereas before this type of therapy became available, many of these patients would have been destined to be incapacitated invalids for the remainder of their lives and, of course, their life expectancy would often be short. Extracorporeal dialysis, or the artificial kidney, often proves to be lifesaving for many patients. To effectively provide this type of therapy requires a coordinated effort on the part of each member of the well-trained, highly specialized medical and paramedical team. Team work has become a necessity in the present day practice of the art of medicine.

The medical and paramedical team concept of medical practice has required an increased emphasis on the training and a much more specialized type of training for each member of the team. This has necessitated the establishment of numerous highly specialized technical training programs for medical officers, nurses, medical allied science officers, hospital corpsmen, and many others. Much of this training has been accomplished as in-service training at naval medical facilities, but we have also utilized the training programs and experiences of the faculties and staff of civilian medical institutions and hospitals in providing this specialized training to our personnel.

In the treatment and management of patients who have comparatively simple and uncomplicated diseases or injuries the medi-

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cal and paramedical team also plays an important role. This is particularly true in the case of a patient who requires hospital treatment. For example, in the past the ill or injured patient was cared for and treated almost exclusively by the physician and the nurse. Now a patient is seen by not only the physician and nurse, but also by the laboratory technician, X-ray technician, Physical therapist, occupational therapist, dietitian, and many other members of the medical and paramedical team.

Every effort has been made in the Navy Medical Department to emphasize the importance of coordinated teamwork to all members of the medical and paramedical team in order to provide the highest calibre medical care to our patients. Our training programs have been altered and intensified to attain this goal. Even greater emphasis has been placed on the necessity for all members of the Navy Medical Department to work closely together in order to fully and effectively carry out our mission. Every hospital corpsman, nurse, medical service corps officer, medical allied science officer, dental officer, and medical officer are all important and essential members of this team and each must be able to efficiently carry out his portion of the job if the team is to function effectively.

Many recent developments in the Navy have created new medical and Preventive Medicine problems. One of these is the Nuclear Propulsion Program for submarines and surface ships. It has been mandatory that all possible precautions be taken to prevent radiation injury to personnel aboard as well as radiation contamination to the environment in which the crew lives. Because of the carefully worked out engineering design and construction of these fleet units and the persistent preventive medical efforts and precautions no crew member of a nuclear powered craft has been exposed to a significant or injurious amount of radiation. The nuclear powered submarines are capable of remaining submerged for long periods of time as has been shown on numerous occasions. It was originally felt that prolonged submersion in the confined spaces of a submarine might produce incapacitating psychologic disturbances in the personnel aboard. By careful screening and selection of the crew members it has been possible for the personnel to remain submerged for extended periods of time without harmful effects to the personnel. The responses of the members of the crew have been very carefully observed and studied by our psychiatrists and clinical psychologists and these studies will be continued in order that improvements may be made to prevent psychologic disorders among these personnel. It has been necessary to provide additional training for our submarine medical officers and other medical department personnel assigned to the nuclear powered submarines in order that the problems of underwater operations may be intelligently handled.

Major advances have been made in the field of Aviation during the past few years. In order that our pilots and other flying personnel may be afforded the greatest possible safety, Naval Aviation Medicine has undertaken an intensive and energetic research program. The operation of naval aircraft from the confined spaces of an aircraft carrier creates aeromedical problems for the naval flight surgeons which are not encountered by other aviation medicine personnel. From a space of approximately 1000 feet long and 200 feet wide, as many as 100 aircraft are stored, serviced, launched and landed. Within the confines of the flight and hangar decks the complete functions of a large airfield are accomplished. The problems of ground crew protection against noise, vibration, heat, blast, and inclement weather are greatly magnified by the required compression of many men and considerable equipment to a small confined area. The simultaneous operation of large numbers of jet aircraft on the flight deck of an aircraft carrier may create problems of major significance. Acceleration and deceleration stresses to pilots and aircrewmen resulting from catapulting and arrested landings of jet aircraft at comparatively high speed present various problems for the naval flight surgeon. The prolonged existence of large num-

bers of men within a relatively confined and noisy space, away from their families frequently results in a higher incidence of psychogenic problems then are encountered on shore, the usual problems of food handling, sanitation, and habitability are magnified aboard ship. Studies are being conducted on the Navy's human centrifuge at the Naval Air Development Center, Johnsville, Pennsylvania, by programming space flights using a dynamic flight simulator. In this simulator, the pilot is able to "fly" a complete mission in the centrifuge gondola with complete instrumentation and to receive all the accelerative effects he would normally receive were he in actual flight. An electronic computer receives, records and transmits pilot reactions to the controls and feeds back resultant simulated aircraft performance to the gondola controls, thus producing realistic forces in acceleration, deceleration, rotation and other movements that must be dealt with by the pilot. By pretesting pilot reactions to developmental aircraft in this simulator, naval aviation medical personnel have been able to predict actual and potential plane-pilot flight failures and to recommend changes in design and techniques. The utilization of a flight simulator has resulted in the saving of lives and considerable money, and as aircraft and space craft become more complex and their missions more dangerous, this device will prove even more valuable. The Navy's newest aluminized full pressure suit has been selected for use by the astronauts who are to fly in Project Mercury. This suit was developed at Philadelphia by the Air Crew Equipment Laboratory under the direction of naval aviation medicine personnel. The space capsule destined to carry the first astronaut will be tested by the Navy at the same laboratory. Because of Aeromedical problems peculiar to naval aviation and the continuing need for investigation for newer and more effective methods of protecting the airmen from the hazards encountered in high speeds, high altitudes, and space flights, naval aviation medicine will remain a distinct and important entity within the sphere of military medicine.

The officers of the Navy's Dental Corps have the capability of rendering invaluable assistance in direct support of other members of the medical team. This is true not only in the management of patients in our hospitals and other medical activities, but also in the management of large numbers of casualties associated with major disasters, either conventional or war. Their excellent professional training, experience, and standards of ethics makes them most capable members of our medical team. The Navy Dental Corps has been and still is, conducting intensive training for dental officers in the management of mass casualties. They have been true pioneers in the development of excellent and realistic whole body manikins in support of these training efforts.

There has been an over-increasing emphasis of the medical team concept among all of the Federal Military Medical Services during recent years. As is well known we have a single manager medical supply system. Some of the military hospitals and medical activities are jointly staffed by personnel from the three Services. Cross utilization of our hospitals and medical facilities has been increased during the recent past, which permits more efficient medical care for patients from all Services.

The Navy Medical Department has attempted to train the personnel of our medical and paramedical team and to provide the necessary tools and equipment in order that we may provide the best possible medical care to our patients and in order that our medical team will have the capability of coping with any emergency or disaster situation which may arise. Teamwork must be the key word in the event of a national disaster.

The Air Force Medical Service*

By
MAJOR GENERAL O. K. NIESS
The Surgeon General of the U. S. Air Force

DURING the short time of my remarks today—perhaps ten minutes—one Air Force baby will be born and 225 outpatient visits will be made to Air Force hospitals or dispensaries throughout the world.

Our annual totals are some 49,274 children, 404,127 admissions, and 11,805,694 outpatient treatments. In supporting the Air Force mission world-wide the Air Force Medical Service operates 134 hospitals and 106 dispensaries staffed by 8,310 medical and dental officers and 31,744 medical personnel.

While the Air Force Medical Service, as a separate Service, only recently celebrated its tenth anniversary, its roots go much deeper.

The School of Aviation Medicine was founded 41 years ago—shortly after man's first feeble aerial flight. In this half century, we have witnessed the tremendous progress in the state of the art of aerial flight to today's supersonic aircraft operating at extreme altitudes and capable of intercontinental ranges.

Pacing this swift progress have been the giant strides made in medical research and development which have enabled man to meet and overcome the physical, mental and environmental demands of today's high performance, high altitude flight.

The progress of the pilot has been paralleled, and in some cases preceded, by the flight surgeon whose continuing task has been to predict the unknowns of human reactions to an essentially hostile environment.

In the decade ahead, the conquest of true space by man poses the most stimulating challenge yet encountered by Air Force medicine. In atmosphere flight, man has remained to a certain extent under the protection of the surrounding air. But a vertical rocket trajectory soon leaves the atmosphere behind and space flight is distinguished by a complete absence of an atmospheric medium.

Providing the means for man's survival in the totally hostile environment is the task which concerns Aerospace Medicine today.

It is this responsibility for the Welfare of our flying personnel in environments peculiar to Air Force missions that distinguishes Air Force medicine from that of the other services. Training programs in Aviation Medicine set standards which in 1953 led to the recognition of Aviation Medicine as a specialty. Today, more than 100 Air Force Flight Surgeons are certified in Aviation Medicine.

Organizationally, Air Force Medicine is established as a part of the staff, rather than as a separate corps. I believe this close identification with mission accomplishment underlies the fine spirit of cooperation and sense of mission support which I find in the Air Force Medical Service today.

Considering these and other aspects of the world-wide Medical Service operation, I have no doubt that in the years ahead we can continue to provide maximum medical support to the Air Force.

In building our capability to support the Air Force in its world-wide operational mission, three programs have been emphasized: clinical medicine, research and teaching.

Since its origin ten years ago, the Air Force Medical Service has constructed more than 200 new medical and dental facilities. Today there are 11 Air Force specialty hospitals in the continental United States and one in each major overseas command offering care in 31 medical specialties.

In providing maximum medical support

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of the Air Force and complete clinical care of the Air Force man and his family, and in the interest of not duplicating facilities or service, we have worked closely with the other services in sharing capabilities.

For example, the Air Force has used the fine facilities of the Army's Burn Center in Texas with good results. Last year the Air Force spent $18,778,000 to obtain in-patient care from the other services. Nor has this been a one-way exchange. We provided $8,388,000 in in-patient care to the Army and Navy.

While our research programs are oriented to provide the means for man's survival and function in air and space, aerospace research has made important contributions to general medical practice.

The impact on general medicine has been twofold. First, it is increasing our knowledge of our natural physical environment on earth.

Secondly, it is influencing the development of medical instrumentation and methods used in diagnosis, observation and therapy.

An example is the environmental factor of gravity. Gravity has been, and remains, one of the vital topics in aeromedical and space medicine research. When man first flew, increased G's were observed as resulting from aircraft maneuvers. Now, in coming space flights, we are faced with still higher and longer lasting G-values during launching and re-entry into the atmosphere.

Physiological studies on centrifuges and rocket-powered sleds are not only providing the knowledge of how to cope with these dynamic conditions in flight, but they are also of great value for the analysis of mechanical injuries and protection in traffic accidents here on the earth's surface.

Studies of the psychophysiology of sensory deprivation, isolation and confinement conducted in conjunction with studies on space cabin environments should lead to man being better able to face the stresses and strains of his everyday environment. And studies of the biological effect of cosmic rays upon tissue has already increased our knowledge about the impact of these ionizing radiations and have been of great interest to every physician.

Also, space medicine has developed and tested new methods of instrumentation in space cabin simulators and actual rocket flight for recording environmental factors such as oxygen and carbon dioxide pressures, and new methods have been developed to keep them in physiologically acceptable ranges.

The application of these new methods and highly miniaturized instruments to hospital patient care could be profound. It is not inconceivable to me that patients could be electronically monitored, so to speak, and be watched from a central recording table many miles away.

I do not doubt that Aerospace Medicine will not only make substantial contributions to the realization of the goal of manned space flight, but that the results of our research also will benefit man wherever he may be.

The School of Aviation Medicine, formerly at Randolph Air Force Base and now at Brooks, has played a vital role in our training program. Now, with the establishment of the Aerospace Medical Center at Brooks AFB by combining the School of Aviation Medicine at Brooks and its Gunter branch, the USAF Hospital and Epidemiological Laboratory at Lackland Air Force Base, our training program as well as our research activities are greatly enhanced.

We have gained much in the mutual exchange of medical information with our friends of allied nations. Not only have we improved our professional knowledge, but also I hope we have furthered understanding and mutual trust among our peoples.

The practice of medicine is universally based upon mutual trust and understanding between the doctor and his patient. This same relationship of mutual trust and understanding must also underlie world peace if it is to be enduring.

The cause of furthering understanding is an effort to which we must—and can—exert our best efforts in the practice of Air Force medicine.

Medicine in the U. S. Public Health Service*

By

LEROY E. BURNEY, M.D.

The Surgeon General of the U. S. Public Health Service

DR. CRAIG, Mr. President, members and distinguished guests of the Association. In these days and months of rapid changes, I think the theme that has been selected for this Association's meeting, namely, "The Practice of Military Medicine—Broadening Concepts" is a most appropriate one. It also reminds me of the three characteristics of a learned profession, which I think the medical profession exemplifies, namely, *research, teaching* and *service.*

The discussions by the three previous speakers exemplify the fact that these services, together with the rest of us who are talking, do carry out these concepts of a learned profession. This has not always been so, at least, in my own service. Entering the Public Health Service about 29 years ago, we had major emphasis at that time on our Marine Hospitals in which we cared for the Coast Guard and the Merchant Seamen and our Foreign Quarantine and Domestic Quarantine activities. Our National Institutes of Health were then the old Hygienic Laboratories and were composed of several hundred employees and a very small budget. These all have changed remarkably during these 28 or 29 years. We are now, in our hospitals, not only treating the Coast Guard and Merchant Seamen but also the men and dependents from some of the other Services. We have our Leprosy hospital at Carrville, Louisiana. We have the two narcotic hospitals, and about three years ago, we were given responsibility for the medical care of the Indians, the Alaskan natives and Eskimos. This involves about 57 hospitals in the Western part of the United States and in Alaska. In these hospitals, we are now doing, in addition to the patient care, a great deal of research and much more training than we were doing 28 or 29 years ago. In our quarantine program, which was limited in past years primarily to those entering the country from aboard ships, we find that in the United States last year there were approximately 2.5 million people who entered the country. Now some of those were our own citizens returning from abroad and many of them, of course, were people from other countries. A vast majority of these individuals now come by airplane rather than by ships so that our quarantine activities are mainly centered at our major international airports. Of course, one does not need to mention to this audience the shortening of time for a trip from a country which may have certain diseases which we would not like to have introduced into the United States and for which we still have certain vectors for their transmission.

But I would like to dwell briefly on some of the additional activities, the expanded activities, which the Service has carried on. These are not limited to the Public Health Service but are carried on by the Veterans Administration as well as the other three Services. Our research activities, of course, mainly centered at the National Institute of Health at Bethesda, Maryland, are not to be compared in size or in content with the old Hygienic Laboratory. It is interesting to note that our National Institutes of Health actually were established first at our Marine Hospital at Staten Island by Dr. Kenyon in the late 19th century as a part of the medical care of patients in that hospital. Cholera and plague and some of the other infectious diseases were existent at that time. Now they are centered in this large campus organization at Bethesda. Included are not only the inter-mural research programs but sizable sums of money for the support of extra-

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mural research in medical schools, universities, and in hospitals throughout the country and money for the training of research workers. It is interesting to note, too, that there is a considerable segment of funds devoted to research projects and training in other countries. We support a fairly large number of grants, of researchers in other countries of the world and fellowships for scientists from other countries who want to come to the United States for training in research activities. In addition to the National Institutes of Health, we have other research activities which again exemplify the broadening concepts of health needs which our Nation and other Nations are faced with. The Communicable Disease Center in Atlanta, Georgia, is concerned with, not only research in those diseases, but with the technical assistance to our own states and to other countries. The Sanitary Engineering Center at Cincinnati, Ohio, is concerned, of course, with many of the problems of environmental health: water pollution, air pollution, radiological health, and similar activities. We have an Arctic Health Research Center in Alaska which is concerned with the health problems of cold climates, and finally, an industrial health program research activity at Cincinnati, Ohio. There are certain satellite laboratories, of these, of course.

In addition to the research activities we are interested in many of the environmental health problems that come to our country as an industrial nation and with our population becoming a metropolitan one as contrasted to a rural population. Papers and the news magazines indicate that we will have about 33 million more people in 1970 than we have at the present time. They predict large metropolitan areas along the east coast, extending perhaps from Boston on down through New York, and perhaps from Washington on down to Norfolk, and again around the Great Lakes from Milwaukee around Chicago through Indiana and to Detroit. Also the same thing on the West Coast. With the tremendous industrial growth in this country, particularly the chemical industries, we are creating problems at the same time that we make progress. Dr. Fox, the editor of the *Lansing Journal,* the other night was saying that the prevention of disease makes or allows for the development of civilization and the second concept is that civilization of itself prevents disease. He said there is a third concept with which we are now faced and that is that civilization causes diseases and that man now is not only creating the environment in which he lives but he must do a better job of being able to live in that environment which he has created. So we have the problems of air pollution which are more than just learning how to get rid of these pollutents. We must learn what the effect of low level contamination of the air by hydrocarbons or some of the other industrial waste on the human being is. This is not a problem that one completes within a year or two period because one cannot always extrapolate research on guinea pigs and rabbits to human beings when one considers these low level toxic substances. There is the matter of water pollution with the tremendous growth of the chemical industry and our metropolitan growth. Accident prevention is one of the tremendous problems and one in which the medical and health professions have a real contribution to make in this whole area. In the field of radiological health, again, we are concerned with the peaceful uses of ionizing radiation. We have a little better idea of what exposures one can take in a working environment but we do not have too good an idea of what the genetic or other effects of ionizing radiation at low levels is over a long period of time. This, again, is going to take epidemiologic studies lasting for a number of years.

We are also concerned, of course, in this country, because of the control of communicable diseases and many other factors, with the fact that we have an aging population. We have about 14.5 or 15 million people over 65 and this is going to continue to increase. These individuals, of course, have more long term illness, more long term dis-

abilities than any other segment of the population. We see a great deal of interest and concern with the cost of hospital and medical care in the United States. We also see and hear of some interest in providing some means of paying for this care. I think we, as members of the medical profession, have to be concerned, that regardless of how the economics of the situation is handled, that the services that are available to people, the quality of those services, are maintained and even increased. One of the things in which we, as members of the medical health profession are extremely proud of is this quality of care. But there is a danger, I think. There is too much emphasis being placed upon paying for care without even greater emphasis being placed on availability of those services, the distribution of those services and the quality. We have been building a lot of hospitals in the United States in the last 20 years, I think we have added around two hundred thousand beds. We are just about keeping our own because of the population increases and the greater utilization of hospital beds. Now a hospital at the present time costs around 17 to 18 thousand dollars per bed just to build, in some places a little more than that. Maybe we should place greater emphasis on the prevention of some of these diseases and disabilities if we are ever going to make any impact on the problems of long term illness and care. How much can our economy afford in the construction of hospitals and expensive care without attempting at least to find some other methods of providing desirable services in the home and in less expensive institutions.

In addition to some of these activities and in addition to the provision of care for the Coast Guard and for the Bureau of Prisons for which we are responsible, it is interesting to note some of the other assignments to which our officers have been delegated in recent months. General Quesada, the Director of the Federal Aviation Agency requested the assignment of one of our officers, Dr. James Goddard, to become Civil Air Surgeon about 3 or 4 months ago. Dr. Goddard is now assisting General Quesada. President Eisenhower recently established a Federal Radiation Council, consisting of several of the Department heads or secretaries and the chairman of the Atomic Energy Commission. The staff work for this Federal Radiation Council will be done by the President's Science Advisor, Dr. Geo. B. Kistiakowsky. He requested the assignment to him of one of our young medical officers, Dr. Chadwick. We have about 160 of our officers, men and women, assigned on overseas international health activities and we have been given the responsibility in the service for the health aspects of Civil Defense, including the casualty care portion of this. I do not need to tell you that that is something one doesn't ask for, but when the job is given to you, you try to do something about it. It's not a very easy job, as I am sure you recognize.

Now, in closing, let me stress something some of the previous speakers have mentioned and that is some of the cooperation among the various services here in the Federal Departments. We often hear criticism of what is done in Washington. Sometimes we add our own criticism, but I would suspect that if there was as good an effective working relationship among others not necessarily government workers outside of Washington we might have a little more effective care.

Last summer I visited Egypt. This was my first opportunity to see the Navy Medical Research Unit in Cairo. I had heard a great deal about this, which I believe was established about 1948. They are doing a tremendous amount of fine research work in that unit; in addition, they are doing more; they are cultivating and developing friendly relationship and understanding between not only the Egyptians but some of the people of the surrounding countries, the medical professions primarily, of course. The budget of that unit is something like 2 or 3 hundred thousand dollars and I would say it is doing more good than several other millions that

might be spent. You may recall that about two years ago we had the Asian Influenza; this was the virus that was isolated by the Army Research Laboratory of Tokyo. The strains were sent to Walter Reed Army Medical Center, were isolated, and typed and, then, those strains were provided to the pharmaceutical manufactures in this country. This enabled the United States to have a vaccine actually on the market before the epidemic began in our country. We would have wished the epidemic could have waited a little longer; it came a little early but even then as a result of the work of the Army Laboratory in Tokyo and that at Walter Reed we were prepared with a vaccine in this country. As General Niess said relative to aviation medicine and space medicine, there will be many of the research activities in the Air Force that will be of great benefit to us in our clinical medicine and in some of our other activities. In the Public Health Service, through its research activities, we have worked very closely with Dr. Middleton and the Veterans Administrations in the evaluation of drug therapy in many areas. I would say that the greatest problem that is going to face us in these services here, as well as all of you who may be in practice, is the matter of health manpower. I will not stress that point here, there is too much to say about it, other than to mention that we are not in a position to provide the same ratio of physicians in the years to come that we have at the present time. The group that just made a study of this recently said that the present ratio of 132 physicians for 100,000 population is a minimum ratio for the people of the United States. I would not differ with this group except to say that I doubt if we have enough physicians now. I would even remove the word "doubt." I do not believe we have enough physicians in the United States at the present time to meet the needs of the American people. We are graduating about 7,000 physicians from our medical schools. This may surprise you, we are licensing in the United States each year (in the last few years) 1,300 physicians of foreign schools. In other words, we are depending upon foreign schools to provide us with about one-sixth of the physicians that we are using in our country. So, instead of being a nation that is contributing to the medical manpower of other countries, we are one of the have-nots and are taking the graduates of many foreign schools. This group of distinguished consultants stated that we will need to be graduating 3,600 additional physicians by 1975 if we do nothing more than maintain the present ratio of physicians to population. I would have you note that that means those 3,600 students would have to be in the freshman class of medical schools by 1971. I would like you also to note that this can be done if we can expand existing schools and build 15 to 20 new two-four year schools in medicine. This shortage of medical manpower we have now, in my opinion, will increase because I am rather pessimistic about us being able to build 15 or 20 medical schools in the next 15 years. I think we are going to have to provide, in the services, greater opportunities than we are at the present time for these physicians and dentists and other groups, to do research, to do teaching and training as well as to provide service in clinical medicine if we are going to be able to attract the kind of physicians, dentists and nurses which we need to provide for a high quality of patient care. Though now we are practicing the characteristics of a learned profession in the Federal Services, and we can be proud of the dynamic progress that has been made, I believe that in the years to come we are going to have to increase and intensify these concepts.

Medicine in the Veterans Administration*

By

WILLIAM S. MIDDLETON, M.D.

Chief Medical Director, Veterans Administration, Washington, D.C.

ALTHOUGH special provisions had been made for disabled veterans of American wars from Colonial days, the first official physical accommodation for their care by the United States was embodied in an Act of Congress establishing the Naval Home in Philadelphia, February 26, 1811. This institution, as a home and hospital, was finally occupied in 1833. In 1868 a separate building was designated for the Naval Hospital. The Civil War brought this need into sharp relief and on June 6, 1861, Secretary of War Cameron authorized Sanitary Commission Homes for the sick and disabled soldiers and sailors. After the Civil War the National Home for Disabled Volunteer Soldiers was established; and beyond this provision the responsibility fell upon the several states. A Congressional Amendment (October 6, 1917) to the War Risk Insurance Act of 1914 made Legal Provision for the Veterans' Medical and Hospital Care for Service-Connected Conditions. On August 9, 1921 the Congress created the Veterans Bureau and transferred the Public Health Service hospitals caring for veterans of World War I to the new agency. In 1930, in an amalgamation of veteran functions, it became the Veterans Administration.

After World War II the medical program of the Veterans Administration had a rebirth when the Department of Medicine and Surgery was organized under Public Law 293, 79th Congress (effective January 3, 1946). Aside from certain realignments of administrative functions, its most important provision was the initiation of the Dean's Committee program. With the conviction that the best medical practice was available in an atmosphere of teaching and research, overtures were made to certain medical schools to participate in a studied cooperative effort to bring their talents into the councils of the Veterans Administration hospitals for their guidance in staffing, education and research. Composed of the dean and heads of major clinical and laboratory departments of the participating medical school, this Committee serves in an advisory capacity to the Manager and the staff of the Veterans Administration Hospital. The Director of Professional Services, in an ex-officio role, is the only member of the full time Veterans Administration staff who meets regularly with the Dean's Committee. He serves without voting rights as the liaison between the Dean's Committee and the Manager and the hospital staff. In many instances he acts as the secretary for the Dean's Committee. The manager and members of his staff may attend the meetings of the Dean's Committee only upon the invitation of the Chairman.

Under Policy Memorandum #2 the several functions of the Dean's Committee are set forth. Importantly the divorce of this Committee from administrative responsibility in the Veterans Administration Hospital has proved a wise provision. The nomination of staff members is a most important function since it has bilateral implications. These men and women will have primary responsibility for the soundness of the veteran medical program within the hospital; but at the same time they will assume certain teaching responsibilities for the medical school. Hence the nominations are made by the Dean's Committee upon the concurrence of the head of the department of the medical school and the chief of service of the Veterans Administration hospital concerned. As the responsible agent of the Federal government, the Manager has the prerogative of veto; but it is rarely exercised since all reservations will have been resolved before his final action is required. A like procedure is

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invoked in the selection of residents for added reasons which will later be elaborated. The Dean's Committee has representation on the Research Committee of the hospital to afford advice and guidance in this program.[1]

In the thirteen years of its existence this program has grown to be the most treasured asset of the Department of Medicine and Surgery. Presently there are 90 Veterans Administration hospitals operating under this system through 72 Deans' Committees, to the vast improvement of veteran care. A recent survey of the participating medical schools[2] disclosed a general acceptance of the plan. Indeed, without exception the deans who responded to the questionnaire, voted for a continuance of the program. Due credit for its success must be granted the far-sighted vision of its founders and the good faith and mutual confidence of its participants. In nine other Veterans Administration hospitals a similar function is served by Medical Advisory Committees composed of dedicated representative physicians of the community.

In discussion with the Dean's Committees and the faculties of the cooperating medical schools the difference in our missions is always emphasized. Whereas the hospitals of the medical schools exist primarily for the education of physicians, with research and service as by-products, Veterans Administration hospitals have service as their primary mission and education and research are perforce secondary, though vital, objectives. The present rated capacity of 123,666 beds is contained in 170 hospitals. There is at least one hospital in every state, except Alaska and Hawaii, and in Puerto Rico. Their average daily patient load exceeds 111,000 and over 500,000 patients are annually admitted to these hospitals. Slightly over half of the beds are occupied by patients with mental illnesses. On February 26, 1959 President Eisenhower enunciated the policy of 125,000 authorized beds and gave the Administrator of Veterans Affairs complete geographic and functional authority for the distribution and use of such beds. In addition, over 17,000 members are accommodated in 18 domiciliaries. Outpatient care through 95 Veterans Administration clinics and Hometown Care on a fee basis by private physicians (over 36,000 a year) and dentists (over 12,000 a year) is afforded at a level of approximately 2,000,000 visits a year. In the total staff of about 130,000 Veterans Administration employees, 4,559 are full-time physicians, 682 dentists and 14,029 registered nurses. In addition there are 2,964 medical residents and 45 dental residents. Only 60 medical and 30 dental interns are enrolled in the system. Full professional support to the medical program is afforded at every echelon by attending and consultant physicians carefully selected from civilian non-government ranks. At the level of the Area Medical Director and Central Office, consultants in medical and co-professional fields are a great source of strength. Appropriate advisory committees are available for counsel in specific areas. The Special Medical Advisory Group to the Administrator, which is composed of prominent experts in medical and related fields, meets quarterly at the Central Office to consider the problems of veteran medicine from the administrative and technical standpoints.

Conceived in the interest of improved medical care through the closer supervision involved in an educational program, the residency pattern has undergone certain basic changes since its inception (1946). The vital part played by the Deans' Committees in its successful pursuit from the outset must be reiterated. Patently the need of the soldier-physician for clinical refreshment on return to civilian life after World War II constituted a cogent reason for its initial popularity and success; but the men who launched this effort appreciated the contribution the educational plan would make to the very atmosphere of the participating hospital. The active part of the academic partners proved fully as productive as anticipated; so that in the better fruits of this wedding it is difficult to judge which institution, the University or the Veterans Administration, has made the more significant contribution in this remarkable cooperative program. Certain advantages are clearly bilateral.

The magnitude of the residency program

is impressive; but more important are certain other questions. First does this plan contribute to the quality of medical care for the American veteran? Second, does the resident get a sound, rounded education under this system? The answer to the first question is unequivocally in the affirmative. The close supervision of the work of the resident assures the highest quality of medical care. We must insist that there are no numbers or cases, but human beings suffering from physical and mental complaints. With rare exceptions these young men are giving full measure, running over, of their best years to veteran medical care. We can do no less than attempt to match their contribution with the maturity of experience. Hence, to the second question the response must be found in a continual self-searching as to the full adequacy of the residency programs. While we welcome the careful scrutiny of review and survey committees of the specialty boards, only eternal vigilance will assure a maintenance and improvement of high educational standards. The constituency of the hospital census in the Veterans Administration by age and sex imposes some immediate limitations. Prompt adjustments under arrangements with University Hospitals met these situation by coordination, affiliation or integration. Failing of efforts to effect such appropriate realignment a residency of dubious quality will be discontinued. Naturally the residency has been considered as a legitimate recruitment device. The "take" is about 30 per cent for employment in the Veterans Administration. The majority (70 per cent), returning to specialized practice throughout the country, represents an imponderable contribution of this agency to the national health.

To fill a pressing need in critical areas the career residency was established. These fields are psychiatry, anesthesiology, physical medicine, pathology and radiology. At present there are 287 career residents on duty. These men and women are paid on a salary scale comparable to the staff rather than the resident levels. Hence a period of obligatory service at a station in particular need of special staff is required on the completion of the period of training.

The Veterans Administration has not entered the field of intern education on a large scale. As stated, there are now only 60 medical and 30 dental interns on duty. The medical intern program is a diminishing one. Earlier commitments are honored, but no new ones are being established. A real need for dental internships has developed. The disproportionate number of dental interns is responsive to this situation. Training programs in nursing, dietetics, social work, psychology and occupational therapy, among other fields of co-professional interest, are two-way streets of sustained interest and service. Clearly these educational efforts feed the spring of national health resources, as they improve the care of the American veteran in our institutions and clinics.

The educational effort is a continuing one in the medical staffs of the Veterans Administration hospitals. Active participation in the professional and scientific meetings of the agency and of general and special medical societies is encouraged. If the staff member is presenting a paper or scientific demonstration, his travel and expenses may be paid when finances permit. Conferences and special meetings of the Veterans Administration details are arranged to expand the educational opportunities of the service. Exceptionally qualified members of the staff are assigned to remote hospitals for short periods as a stimulus to better medicine. The advantage has proved to be bilateral. Of particular importance as a leavening force in peripheral stations has been the physician-in-residence plan. Carefully selected senior physicians or surgeons have been assigned to a hospital removed from a medical center for 3 to 5 days. During this period he works on his own schedule or according to a pattern developed with the local staff. Stated formal talks are a matter of personal taste. Usually he will make routine rounds and from the available patients select such as he may desire as a text for a more detailed staff discussion. At times he may accede to the request of the local medical profession and speak before a county or regional medical society. In essence, he is a free lance missionary of good medicine. The reception of

this plan has been enthusiastic and the stimulation of a skillful teacher-clinician in a receptive environment is immeasurable.

Viewed with some apprehension the overflow of the educational tide into undergraduate levels was foreordained. Contrary to the expressed fears of certain leaders, this wave has not inudated the wards or overwhelmed the veteran patients. Instead, it has further enriched their care. At the present time, over 6,000 clinical clerks from 62 medical schools have some part of their training in Veterans Administration hospitals. The active participation of the hospital staff in this program adds stature to the agency and at the same time serves as a recruiting expedient for the future.

No medical program is complete without research. After long discussion there was finally read into the law of the land the phrase, "including medical research," to modify "complete medical and hospital services, . . . for the medical care and treatment of veterans." (Title 38, U.S. Code, Paragraph 4101.) Furthermore, the Congress directed that research within the Veterans Administration would be responsive to the diagnostic composition of the veteran patients. Wherever possible this policy has been followed; but, on the other hand, one does not dictate nor, for that matter, buy scientific thought. At best we may direct when the climate and the man meet. Moreover it must always be borne in mind that basic research may in the long run pay higher dividends than the applied form. They are complementary or companion elements and both must be cultivated in the interest of the balanced advance of human knowledge. At the conclusion of World War II the design for research in the Veterans Administration centered about the follow-up studies of war casualties. In general the studies were conducted on a contractual basis in non-government medical schools and institutions. Then came a growth of intra-Veterans Administration research interest and facilities. The remarkable capitalization of the radioisotope program gave the agency a primacy and a preferred position in this field. At present few contracts for research are let in areas where the cost of equipment or personnel would be injudicial or extravagant for the agency.

Gradually the singular strategic place of the Veterans Administration for certain types of research has emerged. Among the obvious advantages for controlled studies are the fixed population, its accessibility over a long period of time and the unique circumstance of a chain of hospitals, clinics and domiciliaries for comparative observations. These conditions were not overlooked when the occasion for the evaluation of the chemotherapy of tuberculosis arose. In cooperation with the Armed Forces the Veterans Administration developed the protocol for a cooperative study that was so sound that an irrefutable answer to the clinical place of streptomycin in the treatment of tuberculosis was afforded that was to direct the medical world in this important field. All antituberculosis drugs that have subsequently been developed, have been subjected to the same proved trial of fire. It is one of the most brilliant pages in medical history. Its contribution to the national economy is great; but far outweighing this material dividend is the imponderable value of the return of loved ones to their proper place in home and society.

As indicated, Congress directed that especial attention in research be given to mental diseases, cardio-vascular disorders, hypertension, problems of aging, tuberculosis and cancer. Whenever possible, studies in these areas have been exploited and expanded. For a time the research in psychiatry lagged for the want of trained personnel; but a cooperative study of the various tranquilizing drugs has given a great impetus to this movement. In 1954, $269,500 was assigned to research in neuropsychiatry; in Fiscal Year 1959 the amount was $2,299,623. Cooperative studies are now active on 24 other subjects. Brilliant workers at the Cleveland Veterans Administration Hospital have isolated hypertensin I and hypertensin II. Their meticulous studies may break the barrier to a direct therapeutic approach in clinical hypertension. The most pressing current problems in medicine are associated with the degenerative processes of aging. In

the Bronx Veterans Administration Hospital the fundamental observations of a viral responsibility for leukemia in the mouse have been extended to the experimental reproduction of this disease in very young mice and the separation of another filterable factor (virus) which experimentally produces carcinoma of the salivary glands or breast in mice. The Veterans Administration is engaged in a cooperative study of the chemotherapy of cancer with the National Cancer Institute. The 20,000 patients with cancer admitted to Veterans Administration Hospitals annually afford an unexcelled group for such controlled studies. No agent is accepted for trial without adequate information of collateral and toxic actions.

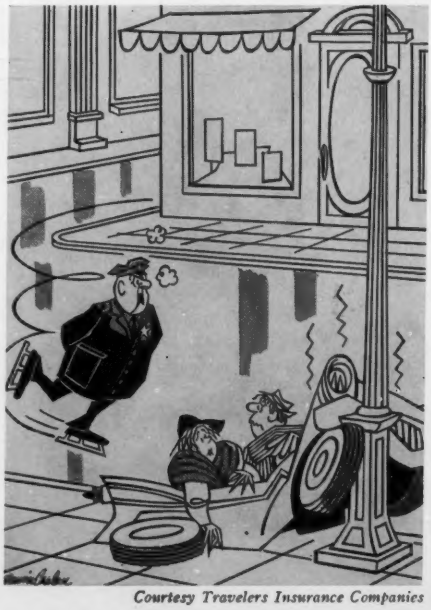
In this climate of serious research and education superior medicine prevails.[3] Removed from the economic distractions of competitive practice the physician may pursue his art and science without inhibition. The support of able peers and consultants is constantly and readily at hand. An ordered schedule of duties affords adequate opportunity for personal advancement and for the enjoyment of family life. The most important beneficiary is the veteran patient, in whose ultimate interest all of these advantages must eventually operate.

REFERENCES

[1] Middleton, W. S.: Medical Education in the Veterans Administration, Resident Physician *4*:124 (Jan.) 1958.

[2] Nunemaker, J. C.: Veterans Administration-Medical School Relationship, J. Med. Educ. *34*:77 (Feb.) 1959.

[3] Armstrong, G. E.: The Medical Program of the Veterans Administration, J.A.M.A. *171*:540 (Oct. 3) 1959.



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THE 1959 WELLCOME PRIZE ESSAY

Military Medical Problems of the Lebanon Crisis

By

LIEUTENANT COLONEL SAMUEL HUREWITZ, MC, USA†

APPARENTLY in good health, Sergeant First Class W ..... J ..... of the 187th Airborne Battle Group advance party returned to Germany on 6 September 1958. Two days later he was hospitalized in the 11th Field Hospital in Augsberg, Germany! He had suddenly developed diarrhea and cramping associated with about 15 stools daily. He was vomiting. His temperature rose to 103°F. The Admitting Officer of the hospital stated that Willie was lethargic and slightly dehydrated. A diagnosis of shigellosis was confirmed by the 11th Field Hospital laboratory. Willie responded rapidly to an average dose of terramycin and was discharged on 12 September 1958. But this was only the beginning of a train of events!

During the week of 8-12 September 1958, a two-year old dependent of a Lebanon returnee was admitted acutely ill with what resembled a meningitic picture. Stool cultures on the patient and the father were positive for shigella. The father was asymptomatic. Subsequently two other children in the family were hospitalized the same week. Despite the serious condition of these two children they responded dramatically to sulfadiazine therapy. Detailed questioning of Willie and the parents of the children revealed the existence of dysentery in Lebanon among many of the troops. This was the first indication that all was not well in Lebanon.

The Preventive Medicine Officer of the 24th Infantry Division completed necessary arrangements for rectal swabs and interviews on 25 of the 40 advance Lebanon returnees after alerting all authorities that there existed a potential threat to the health and welfare of the command. Seven persons were positive for shigella; all were asymptomatic. Here lurked the insidious culprit who appeared to be singling out innocent babies as well for its victims. This danger was abundantly publicized among medical as well as local military personnel. Six of the seven persons admitted the existence of mild cases of diarrhea while in Lebanon. The remaining fifteen members of the advance party were not available for examination.

Sensitivity tests on the advance party of Lebanon returnees were completed in Landstuhl, Germany, in late September and revealed definite sensitivity of the organism. (See letter from bacteriologist. Note the resistance of the organism to sulfadiazine, the drug which effected seemingly miraculous cures.) Prior to the receipt of results of the sensitivity tests the stools from patients given sulfadiazine were negative within 4-7 days.

Insult was added to injury when two "sea tail" returnees of the same unit were hospitalized early in November 1958 at Bremerhaven, Germany, with infectious hepatitis. This incident did not assume significant proportions until 25 November 1958 when a "sea tail" member of another unit was hospitalized at the 11th Field Hospital with infectious hepatitis. On 2 December

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1958, a second member of the same unit was hospitalized with hepatitis; on December 1958 a former member of the 187th Airborne Battle Group who had frequent contact with a known civilian hepatitis case, was hospitalized in the 11th Field Hospital. The Preventive Medicine Officer of the 24th Infantry Division was not rubbing his hands gleefully over the prospect of a second threat superimposed over a known serious contagious disease lurking in unknown places. Gamma globulin was administered to eight known contacts. No new additional hepatitis cases were reported among the main body of Lebanon returnees, thus allaying the fears of the preventive medicine personnel.

How much medical progress have we made in the past century? Let us look at the record. In the American Civil War, the annual morbidity rate attributed to dysentery in the armies was 876 per 1000. The death rate was 10.3 per 1000. During World War I dysentery was a major problem in all of the armies. In World War II, with greatly improved measures of military sanitation that disease was still, in many areas, the cause of a high noneffective rate. It is particularly notable that even in the Navy, with its excellent sanitary system, epidemics of dysentery occurred on ships at sea and off shore at Leyte Bay (Weil, 1947) and Tokyo Bay (Thompson and White, 1946). The disease has been one of the most frequent causes of deaths among children and adults. In the Union Army, 71,691 white soldiers were stricken with "jaundice" during the Civil War. In the South American War, 5,648 cases occurred among British troops. During World War II as many as 10% of entire divisions were stricken.

During the Lebanon gastrointestinal incident, the inevitable subject of dysentery versus diarrhea reared its ugly head. The clinical distinction between them has been maintained up to the present, though the difference is one of severity rather than cause. In general, the term "dysentery" is applied to a febrile illness characterized by a sudden onset with abdominal pain and passage of frequent stools containing blood and mucus accompanied by tenesmus. It may terminate either abruptly in death within a few hours, by gradual recovery, or the illness may pass into the subacute or chronic phase. See table 1.

Toward the end of the 19th century, the clinical syndrome known as dysentery was found to have a dual etiology. It was established that one form of dysentery was due to amebae (entamoeba histolytica). The other, and by far the commonest, was found to have a bacterial etiology. In 1896, Shiga studied an epidemic in Japan, isolated the organism which now bears his name, and presented evidence of its etiological relationship. In 1900, Flexner, then a member of a commission sent out by the Johns Hopkins University to study the disease prevailing in the Philippine Islands, reported recovery from cases of dysentery of a bacillus closely resembling Shiga's organism. The observations were further confirmed by Strong and Musgrave in Manila, by Kruse in Germany and a succession of investigations. Four principle groups have been recognized: Group A Shigella dysenteria, Group B Shigella flexneri, Group C Shigella boydii, and Group D Shigella sonnei.

In view of the diarrheal disease among American Troops in Lebanon and a surprising 25% carrier rate for shigellosis discovered among the members of the 187th Airborne Battle Group advance party, a medical screening and education program for all returning troops was conducted within the 24th Infantry Division Kasernes and Furstenfeldbruck Air Force Base. The program decided upon by medical personnel of USA REUR, Seventh U. S. Army, and the 24th Infantry Division included several phases:

1. Collecting rectal swabs from all personnel and inoculation of samples on SS agar with transport to USAREUR Medical Laboratory and the 11th Field Hospital laboratory for culturing. The Seventh Army provided a team of two non-commissioned officers to provide instructions and guidance to medical personnel involved in this operation, affectionately referred to as "Golden Goose."

2. Medical officers giving personal hy-

TABLE 1

A CLINICAL AND ETIOLOGIC CLASSIFICATION OF DIARRHEAL DISEASES

Group	Clinical Entities	Usual Course	Usual Severity	Etiologic Agent
Primary Infectious diarrhea	Bacillary dysentery (Acute Shigellosis)	Acute	Mild to very severe	Shigella dysenteriae and paradysenteriae, chiefly varieties Shiga, Flexner, Sonne, New-Castle (Boyd 88) and Schmitz (ambigua).
	Amebic dysentery	Acute to Chronic	Severe	Endameba histolytica.
	"Salmonellosis"	Acute	Mild to very severe	Salmonella—chiefly varieties in groups B and C.
	Cholera	Very acute	Very severe	Cholera vibiro.
	Other bacterial infections	Variable	Mild	Slow lactose fermenting paracoli and pseudomonas are under suspicion.
	Parasitic diseases	Variable	Variable	Various helminths and flagellates.
Parental and secondary diarrhea	Parental diarrhea	Acute	Moderate to severe	Chiefly streptococci, also staphylococci and pneumococci
	Tuberculous enteritis	Chronic	Severe	Tubercle bacilli.
	Generalized infections	Variable	Variable	Variable
Non-infectious diarrhea	"Food poisoning"	Acute	Moderate to severe	Toxin producing staphylococci and possibly other organisms.
	"Sewage poisoning"	Acute	Mild to moderate	Products of bacterial decomposition.
	Nutritional diarrhea	Sub-acute	Mild	Dietary deficiency and "insults."
	Allergic diseases	Acute to chronic	Variable	Variable.
	Neuropsychiatric disorders	Chronic	Variable	Variable.
	Other	Chronic	Severe	Local ulcerative or obstructive lesions as those due to neoplasm and lymphogranuloma venereum.
Etiology unknown	"Epidemic diarrhea newborn"	Acute	Severe	Unknown.
	Epidemic vomiting disease	Acute	Mild	Unknown.

TABLE 2
MEDICAL HISTORY FORM

		NO _____
NAME	GRADE	SN
UNIT		

1. Did you have diarrhea, vomiting or abdominal cramping at any time while in Lebanon? Yes No
2. How long did any of the above symptoms last? (Check one)
   Less than one week? One to two weeks?
   Two to four weeks? More than four weeks?
3. Were you placed in the hospital or on quarters because of these symptoms? Yes No
4. Did you receive any antibiotics or sulfa drugs for these symptoms? Yes No
5. Mark the phrase below which best describes the severity of your case.
   a. Mild—only a few loose stools.
   b. Moderate—Several loose stools daily with some cramping, vomiting or fever.
   c. Severe—Many loose stools daily with severe cramping, vomiting or blood in stools.
6. Do you now have any of these symptoms? Yes No
7. Mark the phrase or phrases below which describe the living conditions and area in Lebanon. If more than one are applicable, mark both.
   a. Exclusive field w/field mess.
   b. Field with occasional in-town mess.
   c. Outskirts of town w/own cooking.
   d. Outskirts w/occasional in-town mess.

giene lectures with handout instructions to all returnees.

3. Requiring three negative stools of mess personnel prior to resumption of duties.

4. Treating of all positive cases, followed by stool cultures.

5. Completion of medical history forms (table 2).

A total of 2,498 persons were thus screened; 85 were found to be shigella carriers and two carriers of providencia, an overall rate of 3.5% Four grams of terramycin in 24 hours effected cures in all except five cases. The latter responded to either a week's therapy with terramycin or chloromycetin. Although four severe cases of shigellosis were hospitalized in August and September not one case had been reported from the 2nd or 11th Field Hospitals since inception of the preventive program and the return of the main body of troops late in October.

An analysis was made of 2,450 medical history forms. Of these 864 (35%) showed the persons to be asymptomatic throughout the military operation. Of the remaining 1,586 (64.5%), 130 (8%) were hospitalized and 133 (8.5%) received sulfa drugs or antibiotics. Approximately 14% of the total number who were asymptomatic in Lebanon developed symptoms en route to or upon arrival in Germany. After the completion of a medical history form, an officer was asked several questions referable to his preventive medicine activities. When queried as to why he did not spray DDT to control flies, he is alleged to have replied that there was not any sense in killing off the American flies in his area because that would leave more room for the indigenous flies to move in.

The symptoms of shigellosis encountered in Lebanon and Germany varied from the rapid onset with prostration among infants and adults to the asymptomatic among adults. No rapidly fulminating cases were encountered. Additionally, asymptomatic carriers with no history of previous disease were occasionally identified in Lebanon (table 3).

The "dysenteric" type characterized by bloody, mucopurulent evacuations, tenesmus, abdominal pain and severe general mani-

TABLE 3
NUMBER OF WEEKS SYMPTOMATIC

	Less Than One Week	1–2 Weeks	2–4 Weeks	Over 4 Weeks
Mild	812	166	24	8
Moderate	269	230	41	16
Severe	19	41	21	7
Total Personnel	1,100	437	86	31

festations were present in very few instances. This type is more common in the Shigella flexner type infection rather than the Shigella sonnei or Shigella schmitz types.

The "Diarrheal" type described in literature is free of blood and pus but contains mucus. The stools are watery with some fecal residue and vary in number from a few to many. The accompanying fever, nausea, anorexia, and malaise corresponded to the "dysenteric" type, but the tenesmus and abdominal pain and tenderness were less severe. By far the largest number of Lebanon cases were of this "diarrheal" type. Hormaeche differentiates a "choloriform" syndrome with profuse watery stools from a benign "plain diarrhea" with 3-5 stools daily. It is recalled that simple diarrhea is the common manifestation of shigellosis in this country; also, that of the varying causes of this complaint, shigella infection has a place of high importance. Thus, it would appear that the prevailing opinion that shigellosis needs to be considered only in "dysentery" must be revised.

The sub-clinical shigellosis may be identified in persons with normal health or with illness due to other causes. These are considered to be passive carriers of shigella with other, etiologically unrelated, diseases. An exact number of such carriers was not determined; however, it was considered to be approximately 3.5-5% in this study.

The immediate danger in shigellosis, as well as with other diarrheal disorders, is the loss of body fluids as well as electrolytes. Loss of life in diarrheal disease is more commonly due to inadequate attention to these factors than failure to use specific therapeutic measures. Aggressive and intensive measures were employed locally in hospitalized Lebanon cases to evaluate and correct disturbed fluid and electrolyte balance.

All authorities are agreed that environmental sanitation must be adequate to prevent the spread of infection from recognized cases and from the much larger number of unrecognized cases and carriers. The methods in use in excreta disposal, fly control, water, milk and food sanitation must prevent dissemination of viable enteric pathogens.

In order to familiarize the reader with the chain of events which led up to the development of the foregoing phenomena, it will be helpful for him to know that on 15 July 1958, the 24th Infantry Division Airborne Brigade was alerted for a move to an unknown destination which later developed to be Lebanon. Previously it was reported that the Marines had landed with the customary splash!

Before another 24 hours had flashed by, all involved troops had been immunized, legalized, notarized and had begun their exciting departure for Adana, Turkey. Volunteers were plentiful—at first. Whether it was inducement of the added jump pay, or the glamour of another conquest could not be determined. However, the chips were down and it is significant to note that our soldiers responded gallantly. Upon arrival in Adana, Turkey, where they remained until 18 July 1958, the air was full of mystery. The troopers departed from Germany in anticipation of making a combat jump, thus enshrining their wings with a bronze star. However, the landing in Adana, Turkey, had strange forebodings as if a jump might not be made. These suspicions were fully justified when the 24th Infantry Division Airborne Brigade was unceremoniously deposited in Lebanon without jumping, fighting, or any of the other excitement which could always be found in any insignificant Gasthaus in Germany. Morale and enthusiasm was not at its highest point, which may have contributed to the subsequent events. The troops remained in Lebanon until mid-

October, when all returned to Germany.

A familiar incident in the form of heat exhaustion made its appearance in the very beginning of the operation. Troops were not acclimated to the 87-90° temperature with almost 100% humidity. A change to a light training regime during the period 1100-1500 hours, scheduling physical training during the early morning hours, placing command emphasis on salt and water intake in adequate quantities, resulted in the reduction of heat casualties. The surprising development of a rash of skin disease attributed to improper hygienic measures came to a screeching halt with improved sanitary procedures.

Diarrhea and enteric diseases were not apparent during the "C" ration period. Not only were "C" rations the major edible items but during this period the troops were confined to the olive groves, away from the civilian population. With the advent of time and progress, friendly "B" rations were introduced into the diet along with friendly natives, as the troops extended their interest and operations to nearby towns where indigenous foods and exotic beverages were explored. Enteric disease then became a factor to be reckoned with. At one time, it mounted to ten cases per 1000 day with 50-75 diarrhea patients remaining in the hospital each day. Later this situation was aggravated by 15% being on pass in Beirut daily. Field sanitation left much to be desired from the beginning. Significant improvement became apparent on 15 August when the Commanding General directed command action.

A preventive medicine team arrived 27 July 1958, and immediately started an intensive sanitary inspection program coupled with constructive advice to unit commanders. Also, within the limited capability of only 17 men and equipment available to this detachment, spraying of unit areas was initiated with frequent inspections of each unit. Immediate availablity of a sufficient number of back sprayers to make distribution of one per company would have probably alleviated the problem at the start. The preventive medicine detachment could have concentrated upon the training of unit personnel to do the job with subsequent snowballing of total effort. Unfortunately, these sprayers were located deep in the hold of a ship diverted to Adana.

Aware of the presence of diarrheal disease in Lebanon and having been informed, as a consequence of local surveys, of high incidence of carriers of dysentery among the 187th Airborne Battle Group advanced party, the Seventh United States Army Surgeon required screening of *all* Lebanon returnees.

Originally, the collection of stool samples was planned to be conducted at Gablingen Kaserne, Augsburg, or Warner Kaserne, Munich, in order to minimize processing time at "Fursty," the arrival airbase in Germany. However, 19 October 1958, the Seventh Army preventive medicine officer recommended centralizing all medical processing at Furstenfeldbruck. By 21 October, 1958, this change had been accomplished and operations at Furstenfeldbruck were continued until 25 October 1958, when the last of the battle group had returned home. Since returnees were also arriving from Frankfurt and Bremerhaven, it was necessary to conduct duplicate operations at Gablingen and Sheridan Kasernes during most of this period.

The USAREUR Medical Laboratory provided culture plates on a daily basis because of the need for freshly prepared media. The unavailability of aircraft, because of weather, compelled a last minute change to ambulance shuttle between Augsburg, Landstuhl, Furstenfeldbruck, Munich, and other Kasernes. After a few failures and delays the system became adequate.

Local available records revealed that 2,450 stool samples were taken from among returning personnel in addition to 350 samples collected at Bremerhaven by the Seventh U. S. Army personnel. Laboratory reports on the former group disclosed the following results: 85 positive for shigella; 2 positive for other pathogens. Virtually all those with positive cultures were found on interviews

to be completely asymptomatic. When the 600 cultures from which—for various reasons of improper handling—growth was unobtained or excluded, the rate approaches 5%. A control series on one company of non-Lebanon participants failed to reveal any growth, confirming that the growth was peculiar only to Lebanon returnees.

Food handlers in the 187th Airborne Battle Group were cleared the first week for work within their own unit messes only. All other foodhandlers were required to have one negative stool culture before beginning work. All food handlers were required to have a total of three negative stool cultures within the first ten days of duty. At the end of the calendar year 1958, this operation had been completed. The threat of impending local epidemics had been aborted.

The sub-standard personal hygiene procedure during the initial period was due to several factors. Airborne troops arrived in Lebanon with only one change of clothes in their jump packs. Mosquito nets were not available for all troops. Helmets were used for bathing and laundry as such luxuries were not available locally. One week after arrival, bath units appeared on the scene, field expedients were rigged in some areas, and laundry service was arranged with local commercial laundries. Airborne troops "B" bags arrived with subsequent improvement in personal hygiene. The Commanding General's interest in this subject facilitated improvement by leaps and bounds.

Although the arrival of a U. S. Navy preventive medicine team in mid-August helped improve field sanitation in the U. S. Marine areas, still the sanitary standards within one Marine battalion remained substandard. Even though the team informed the command of the substandard situation, corrective action was not immediately undertaken. On 12 September 1958, three cases of infectious hepatitis appeared in the Marine battalion. A message from the Commanding General directed that immediate action be taken to correct substandard sanitary conditions. A crash program was initiated with resultant improvement. Immune globulin (2,000 cc) was obtained through emergency air shipment from USAREUR and the entire battalion completed prophylactic immunization by 13 September 1958. Two cases of infectious hepatitis were evacuated from another Marine battalion just before debarkation on 16 September 1958. It is generally believed that the use of immune globulin prophylactically averted other such occurrences. One case of infectious hepatitis developed in the Army Security Agency without epidemiological significance.

The movement of Army troops to an insanitary dock area was directed by operational requirements. An intensive preventive medicine program was initiated previous to the move. Inability to restrict indigenous personnel from the area presented many problems. Rodent and insect control measures were undertaken. Bucket latrines were utilized because of nature of terrain. Messes and latrines were screened. Indigenous latrines and showers were placed off limits.

The health of the command improved dramatically in September. The outpatient rate dropped from 26 per 1000 per day in August to less than 10 per 1000 per day during the latter part of September. The enteric rate dropped from 2.4 to 1.2 per 1000 per day. A satisfactory standard of sanitation was achieved among restaurant proprietors receiving Army patronage. These restaurants were inspected and corrective action was taken on recommendations.

The Medical Supply problem first encountered during the early landing phase was multiplied because automatic resupply did not replace fast moving, popular brand items. A SETAF ferryboat shipment did not arrive as expected and emergency requisitions, although urged by the surgeons, were not submitted by the Logistical Command because of the anticipated ferryboat arrival. Subsequently, critical shortages became aggravated. The surgeons were perturbed by the supply shortages, as can well be imagined. To handle this emergency, several items were purchased locally. Although local procurement made its debut 25 July 1958, it was not until 24 August 1958 that the ad-

ministrative procedures were simplified to a practical degree. If this problem could have been anticipated at the outset, necessary action could have been taken to preclude these seemingly unwarranted delays.

The basic load consisted of a 10-day supply level. An additional 10-day supply load was airlifted in for the Airborne Brigade within a few days. This was followed by a 20-day backlog of non-delivery. Local purchases were made to supplement the 10-day re-supply. A 20-day supply level arrived by ship. Unit shortages were made up as rapidly as they occurred and approximately 15 days supply was on hand, except for rapidly moving items. Local purchases of pharmaceuticals as belladonna mixtures, paregoric-kaolin at considerable higher prices became necessary. Frequent emergency air shipment requisitions were submitted to USAEUR to bring up the 15-day level of depleted items.

The storage and utilization of whole blood was attempted at brigade level. Whole blood (36 units) accompanied the main body of troops. This created a problem because of the non-availability of ice. Upon arrival at Adana it was discovered that the only supply of ice was one large refrigerator in the Non-commissioned Officers' Club. A freezing plant was located where the blood was stored at constant temperature. Upon arrival at Beirut the whole blood was stored on the USS *Pocono* until the clearing station became operational. A 24 unit blood supply was maintained in the clearing station, thereafter most of it passed the expiration date so it could not be utilized; however, blood was always available at the 58th Evacuation Hospital. Air re-supply of whole blood was successful with one exception. One shipment was received unmarked in an open, non-refrigerated box.

The popularity of the Army medical supply service was unfolded when the Marines, without adequate medical supplies of their own, called upon the Army for help. Also, a request was received through General Chehab for medical supplies for the Lebanese. Department of Army approval was received to furnish this aid. The decision to send a packet to Northern Lebanese created a new supply problem. Upon utilizing the depot stocks in excess of a 15-day combat supply of the items requested, an emergency requisition was dispatched to USAREUR on 17 August 1958, for the balance of supplies. Due to flight delays it did not arrive until 27 August 1958. This packet included 800 blankets which arrived 19 August 1958.

Due to lack of surgical facilities in the area, it was planned to send all surgical patients to the USS *Pocono* or USS *Jaconic* for definitive surgery. There was no hospital ship available in the area. The 4th Surgical Hospital had not yet arrived in the area. Therefore, it became necessary to use the small operating room aboard the above named ships. This system was operational until the arrival of the 58th Evacuation Hospital. The possibility of sending serious cases to the completely staffed and equipped American University Hospital at Beirut also existed. Six patients were hospitalized there, the hospital days amounting to 120 and the cost $1,500. The Marines that landed three days before the Army were without definitive treatment facilities other than nearby ships. When the Army developed its medical capability the Marines were included as part of the team and received Army medical support throughout the operation.

On 28 July 1958, one week after arrival of Army troops, the 58th Evacuation Hospital arrived by ship and immediately became operational. Fortunately the lack of hostilities precluded large numbers of wounded. Without the services of an Evacuation Hospital or Surgical Hospital for one week, we would have experienced a tragic medical calamity. In a tactical situation the first week would be the most critical since the greatest number of casualities would be expected to occur then. Invariably, the priorities bring the hospital in no sooner than a week after the initial landing.

Initially, the medical personnel consisted of a medical platoon of the 187th Airborne Battle Group, a clearing and an ambulance platoon of the 24th Medical Battalion. There was no trained surgeon authorized for the

Medical Battalion on the current manning level. The Brigade when committed is satellited upon the Division for medical support. All stops were pulled out when the Lebanon whistle blew and the scramble for medical personnel ensued. After the dust had cleared, there were only six medical corps officers left in the Division. Appeals for professional support for the remainder of the Division met only with shrugs of shoulders and raised eyebrows among personnel officers in all quarters, as it was pointed out that the utilizing of medical corps officers for a Brigade headquarters was unauthorized.

On 20 July 1958 a medical officer who specialized in obstetrics and gynecology arrived. It was planned at this time to have him on a standby basis to fly by helicopter to either the USS *Pocono* or USS *Taconic* to perform definitive surgery on any casualties. The 4th Surgical Hospital arrived by ship on 5 August 1958. A Navy preventive medicine team arrived in mid-August. A surgical team arrived to support the Marines.

The composition of the command underwent several changes. Initially, the Surgeon's section performed as a special staff section of the Airborne Brigade. On 26 July 1958, the Headquarters AMLANFOR with J-staff and related special staff sections was formed. The Surgeon's Section of the Brigade became the Surgeon's section AMLANFOR, being coordinated with the J-4 section. The mission of this headquarters was to formulate a broad policy and supervise its execution. This was accomplished by issuing publications and directives with coordinating action in the field. The policy and supervisory limits of this headquarters being the 24th Airborne Brigade, 201st Logistical Command and 2nd Provisional Marine Forces.

The Brigade Medical Units instituted a well supervised training program. It was the consensus of opinion that had actual combat ensued the medical units of the Task Force would have performed their mission in a commendable manner. A field medical service training program was also initiated for the Lebanese Army Medical officers.

The evacuation policy was established as 30 days initially. Later, it was reduced to 15 days. Evacuation by air was not as effective as stateside because of many problems common to an operation of this type.

A supervisory problem was manifested early in the operation because the 201st Logistical Command Surgeon was a major of the Medical Corps. Both supporting hospitals had lieutenant colonels as commanders with additional lieutenant colonels on the staff. This was a bitter pill for some of the lieutenant colonels to swallow. Instances developed where the advice on medical matters was passed down from the Logistical Command without expeditious results.

Summary and Conclusions

The purpose of this paper is to isolate the medical problems inherent in a brush-fire type operation. Once isolated, the problem should be studied with the view toward prevention of recurrence by planning well in advance those contingencies which are common to these operations. Idealistically, early medical planning would have prevented some of the problems which were created. Usually, the highly classified nature of these missions renders it difficult to plan well in advance. However, astute surgeons can familiarize themselves with the classified missions charged to their command, on a need-to-know basis. This may require an obtrusive approach which may be foreign to the individual's personality. Where life and limb are concerned any sacrifice is worthwhile.

This type mission proved conclusively the need for a tri-service preventive medicine council to provide adequate strategic planning for emergencies. However, beyond the planning stage lies the secret of the success of any such program. This job places upon the shoulders of the surgeon who must have tenacity and resilience to convince the commander of the tremendous odds in favor of winning the battle if a good preventive medicine program becomes a matter of aggressive command supervision. The publication of directives in higher headquarters is only the first step in getting the job done. The follow-through supervision is needed to insure com-

pliance with instructions. It is well to remember that there is no substitute for personal contact with commanders at all levels of the command.

Early back-up medical support is a must in order to provide definitive care. It appears that when priorities for support are established, medical back-up support emerges low on the list. Commanders are never startled by lack of medical back-up support until confronted with the stark reality of impending doom. Only then do they expect miracles from medics and as is usually the case, the medics produce.

Sir William Osler said that preventive medicine is the medicine of the future. Task Force 201 bears out the wisdom of his prophetic words. We are all well familiar with manpower losses as a result of inadequate medical support. While this problem was not significant in this operation, it was one to be seriously reckoned with initially as it was not known whether this mission was purely administrative or tactical.

This mission forcefully demonstrated the need for additional medical support for Division combat personnel. The three clearing platoons presently authorized ROCI Division to support five battle groups tickles the morbid curiosity of the keen minded who recognize the inadequacy of such a system. After Task Force 201 departed for Lebanon with one clearing platoon, the Division was left with two clearing platoons to support four battle groups and Division Headquarters together with such additional supporting units as Trains and Artillery. The concept of modern warfare evolves around the principles of dispersion, speed, maneuverability, mobility, firepower and independence. How does the medical service fit into this concept? How fast can we disperse when we have a load of patients to dispose of? What do we do with our wounded? Do we have sufficient independent evacuation capability without reliance on the battle group which has already dispersed to some unknown destination? How self-sustaining are we? In addition to the shortage of trained personnel, transportation, and communications, there is also a shortage of assertiveness of the young Medical Corps officer. There is a shortage of encouragement for the inexperienced officer who must develop into an enterprising operator in order to be effective. An experienced senior surgeon and staff is direly needed in every Division to fight for the highest medical ideals which our predecessors established. We have inherited the prestige and dignity of the title, "doctor." Now we must strive to prove our right to this title by taking command of the medical situation or stand helplessly by and watch uncontrolled disease take command. This was the challenge yesterday. This is the challenge today. This will be the challenge tomorrow.

USAREUR MEDICAL LABORATORY
LANDSTUHL ARMY MEDICAL CENTER
APO 180, US ARMY

12 November 1958

Subject: Report of Cultures

To: The Surgeon
24th Infantry Division
APO 112, US Forces
Attn: Chief of Preventive Medicine

1. Inclosed is the report of positive cultures obtained from 2,251 rectal cultures taken on Lebanon returnees of the 24th Infantry Division during the period of 20 Oct through 29 Oct 1958 at Augsburg. Positives and questionable cultures (the latter still under study) are included.

2. The antibiotic sensitivity of the various Lebanon strains has essentially followed a single pattern throughout the survey. Strains were sensitive to chloramphenicol, terramycin, and aureomycin, moderately sensitive to dihydrostreptomycin and neomycin, and resistant to gantrisin, sulfadiazine, and Kynex. The behavior of these strains in the presence of sulfadiomides is still not entirely understood; temporary inhibition with prompt secondary growth suggests that the sulfanomide may be inhibitory but promptly neutralized by a competing substance such as PABA. Further studies are projected for this group of Shigella strains.

3. The percentage of positive cultures in these groups was relatively high in some, approaching 10%. In other groups, where cultures were not taken by the laboratory team but by personnel not known to the laboratory and not evidently adequately trained in such procedures, the rate fell abruptly to 0.9 to 2%. It is deemed probable that some of these cultures represented false negatives.

DONALD HUNTER
Major MSC
Bacteriologist

Memorable Events, Lives, and Books
Calendar of Commemoration for 1960

By
CLAUDIUS F. MAYER, M.D.

"Life is short; the art is long; the occasion brief, the experience fallacious, the judgment difficult. . . ."
(HIPPOKRATES, of Cos: *Aphorisms.* 5th century B.C.)

IF OUR annual commemorations of jubilees and centennials were to be labelled by outstanding personalities, the year 1960 should be then set aside in honor of Hippokrates, Greek physician, native of the island of Cos, whose life and practice, some twenty-four centuries ago, has left an indelible stamp upon medicine in general and upon the attitude and manner of the practicing physician in particular. Throughout Antiquity, the Middle Ages, and the Modern Era, Hippokrates and the doctrines which traditionally carry his name remained the steady and reliable beam of light for medical progress. Even now, in the Age of Atoms, though the sequence of centuries faded his figure into a misty past, his sober practical ideas and theoretical principles continue to stay with us as the reality at the base of each therapeutic action and of any new medical discovery.

His very first sentence in the "Aphorisms," which we selected from his work as an appropriate motto for this year's Calendar of Commemoration, is an eternal truth about Man's existence, about his vain efforts, his difficulty of mastering art and science, about his deceptive senses which make it harder to arrive at the truth. Indeed, any contemplation of the Past must bring the value of this aphorism closer to us:—Life is short, and the individual has not much opportunity to assert himself.

Yet, he shall always struggle and try anew. It is perhaps this basic inanity of individual efforts that makes us look back with reverence upon those who had been even a little successful in the emergence of new ideas and in the advancement of human progress.

PART 1: MEMORABLE EVENTS

Turning the pages of history, we now select a few memorable events which occurred in some of the 10th and/or 60th years of various centuries. Thus, for instance, in 1710 B.C., a group of farming *Arcadians* emigrated from the Peloponnesus into Italy where they established a colony to live in peace and to care for their cattle. Where is their colony now? And where is the kingdom of the warrior *Medeans* which was founded a thousand years later (710) B.C.) in the Middle East? Life is short, even for nations. From the Roman history, the year 60 B.C. brings back the memory of the *first triumvirate.* Two generals, Pompey and Caesar, and a rich banker, Crassus, organized this "committee" of government. They also invited Cicero to participate, but the famous orator stayed away because he wanted to save the democratic power of the Roman senate of which he was a member. During the early years of the Christian Church *Apostle Paul's* imprisonment occurred in 60 A.D. in Rome.

In 410 A.D., the Goths under Alaric progressed into Italy, and occupied Rome for six days, killing, raping, robbing, and burning (the *"Sac of Rome."*). In those days, Rome was at the mercy of all barbarians whose only ambition was robbery and plunder. Two hundred years later (610 A.D.), in the Eastern Roman Empire, *Heraclius* became the emperor. As a very devout follower of Christ, when he recovered the Cross of Jesus, he carried it back to Jerusalem on his own shoulders.

In 710 A.D., after the conquest of North Africa, the *Saracens* decided to invade Europe. That year, a hundred Arabs with 400 Africans passed over in four vessels from Tangier (Ceuta) to Spain. A larger invading force was readied for next spring under

the command of Tarik. This was the most fateful event in the Middle Ages since it started the almost 800-year occupation of Spain by the Arabs, and it opened a road for the penetration of oriental civilization and culture into Western Europe.

In 860 A.D., Gorm, the strong man of the North, united Jutland and the Danish Isles, and became king of *Denmark*. Afterwards, he was ready for invasion and conquest of other parts of Europe. In the Far East, a strong ruler consolidated the Chinese Empire in 960 A.D. But the strength of the Chinese melted before the invading Mongolian hordes of Genghis Khan in 1210. His successful conquests in the East were soon to be followed by a continuous, relentless *push of Asian people* of rising power against Europe, and this push has not ceased until the present times. Some of the European captives were organized and trained by the advancing Turks as a sort of medieval foreign legion about 1360 A.D.; these troops became known as the *janizaris* (yengi cheri, i.e., new soldiers), the most cruel and truculent group of warriors.

During the 15th century, and at the time of the great discoveries, Portugal was also very busy with navigation and colonization. In 1510, they captured *Goa*, a Muslim settlement with an excellent harbor, which was thought to be the key to the Far East and a jumping ground for the conquest of East Africa. As the seat of the Asian Portuguese Dominion it became the most thriving port of the Malabar coast. Francis II, died in December 1560, and the 10-year old Charles IX became the king of France. *Catherine of Medici*, the queen mother became the regent, and for many years she, and Philip of Spain and Elizabeth of England remained the main factors of European politics. In the same year, *Gustaf Vasa* died in Sweden, leaving a well organized kingdom to his successor. His policy was: "Necessity breaks law, not merely the law of man but at times the law of God also."

In 1610 A.D., in the American continent French missionaries and fur traders penetrated the region of *Michigan*. English history of that year initiated the period of the reign of the amiable but worthless Charles II, also called the period of "The *Restoration*" (of the Stuarts). The most spectacular event of that year was the *marriage of Maria Teresa*, only daughter of Philip of Spain, to Louise XIV, king of France. It is said that Philip and all his family and Court slowly travelled through Castilia to the French frontier. Two thousand mules were needed to carry the baggage, with seventy caparisoned horses and 900 saddle mules. Seventy state coaches carried the nobles and 18 horse litters were devoted to the ladies who followed the infanta. Velvets, brocades, works of goldsmiths, gloves, perfumes, laces, etc., burdened 75 sumpter mules. From the year 1660, a probably apocryphal Code of Laws and Customs is said to have originated; the earliest puritanical *"Blue Laws"* of Connecticut, which set the death penalty for many things.

As the power of England was rising through its colonization, more and more Englishmen became interested in quickly acquiring wealth by the wise (or foolish) investment in authorized trading companies. In 1710, the *South Sea Company* was established in England, a venture with right of trade with Spanish America. It was originally intended for collecting money to repay a large public debt. It was one of the first giant stock-exchange bubbles, cleverly advertised in England so that the stock rose to prodigious heights in value. The stock was repeatedly sold in unlimited number, and at the third subscription, 5 million shares were sold at £1,000 each (the first sale was at the stock price of £300, the second at £400). The company was not doing very well. Fifty years later, in 1760, the avalanching industrial revolution opened other perspectives, and the machines brought great social changes. In September of the same year *Montreal capitulated*, and under the conditions of the treaty, Canada passed to the British Crown. By the way! There was a sort of *Berlin crisis* even in 1760 when, during the Silesian Campaign in the Seven Years War, Russian and Austrian troops en-

tered the undefended city, and occupied it for about five days.

In 1810, Europe was having a spell of peace. More turbulent was the year for the *American countries.* Chile started a *revolution* against the colonialism of Spain. In Mexico, Hidalgo demanded freedom from Spain, and started his 11-year long guerilla warfare. Revolutions broke out also in Venezuela and Paraguay. In the U.S., two *expeditions* were sent out to the region of the present Washington State by J. J. Astor to promote fur trade along the Columbia River (the next year, he established "Astoria," a trading post near the mouth of the river).

In 1860, Great Britain broke the Indian rebellion, while the Italians continued their fight for national unity under *Garibaldi.* In the United States, the Republican National Convention at Chicago nominated *Abraham Lincoln* for president with 364 votes. The total number of immigrants was a little over 150,000 during the year. Visitors also came, among them *Prince Albert Edward,* the later Edward VII, who travelled incognito as "Baron Renfrew." This happened in July. Few thought it possible that a few months later, on 20 December, 1860, South Carolina's State Assembly would repeal the Constitution, and would *secede from the Union,* leading the whole country into the misery of four years' fratricide.

Arts and Sciences

In 710 B.C., Rome was still a very young city when one of the early kings decided to change the Calendar and to divide the year into *12 months* in place of the former ten divisions. In 460 B.C., Greek architects finished the *temple of Poseidon,* and in 310 B.C., Roman engineers erected an aqueduct and bath, the 11-miles long *"Aqua Appia."* Another early monument is the *Pantheon* in Rome which Hadrian started to build in 110 A.D. This was supposed to be a temple for all gods adulated by all nations of the Roman Empire. Rome as a cosmopolitan town gave refuge not only to conquered kings but also to refugee gods of many extinguished heathen nations. The Emperor wished to apply the successful Roman policy to religions also, by treating the "foreign gods" on equal terms with the natives.

From the period of the expansion of Christian charity, we have the memory of a hospital built in 610 A.D. at *Ephesus* in honor of St. John, the Almsgiver. In 660 A.D., the *Hôtel-Dieu* of Paris started its records. The general cultural progress of the Middle Ages left us schools, hospitals, cathedrals and universities. The *Notre Dame* in Paris was rebuilt in 1010 A.D. Among the schools in the "darkness" of Europe, one of the earliest was the *Salernitan School,* established around 1060 A.D., and devoted entirely to the healing art. Here, the treasures of Greek medicine and the heritage of Hippokrates were salvaged after a detour through the Arab colonies of Africa, Spain and Sicily. This medical school became famous not only for its teachers but also for the versified "Salernitan Rules," health precepts which were reproduced in numerous monasteries by handwriting, and later translated and printed in many editions. Other remarkable medieval achievements were the *Laon cathedral* (1160), and the *Rheims cathedral* (1210) which had to be rebuilt only after its destruction during World War I.

In 1210, the *College of St. Cosmos* was founded by Jean Pitard in Paris. In 1260, the building of the *Salisbury cathedral* was finished, and the University of Valladolid started. A crusade of this year became memorable for being the earliest example of an epidemic outbreak of *scurvy.* On February 26, 1410, an institution was opened in Valencia, Spain, for the care of "witless wanderers," and in the same year another *insane asylum* started in Padua. In 1460, *Wood engraving* was invented as a precursor of the printing press in Europe. The most important event of this year was the opening of the *University of Basel* on 4 April. As a sign of the growing humanistic studies, in the same year the *Roman Academy* was founded by Julius Pomponius Laetus. His ambition was to imitate as closely as possible the manners, occupations, and amusements of the ancient Romans. Among the medical memorabilia,

we have a surgical treatise which *Pfolspeundt,* surgeon of King Mathias of Hungary, wrote during 1460. In one of his then current ecclesiastical sermons, Savonarola, the "whip of God," made some allusions to the difficulty which parturient women may have who are with narrow, *contracted pelves.*

In 1510, Europe was suffering from a pandemic contagious ailment which modern historians identify as *influenza.* In Nürnberg, Peter Henlein made the first *pocket watch* at the same time. In 1560 the *potato* was introduced in Europe (in Spain); Pizzaro brought it from the Incas of Peru (this happened a quarter of century before Sir Walter Raleigh gave the potato to England). In the same year Monardes introduced the *balsam of Peru* into European medicine. From the very beginning of the renaissance, the need had been felt for a kind of gathering place where scientific research could find a sympathetic soil. This need led to the foundation of societies and academies. One of the earliest was the *"Academia Secretorum Naturae"* founded by Della Porta at Naples in 1560. It was the first society for prosecution of the physical sciences. In the same year the *University of Douai* was authorized, and a *botanic garden* was created at Zürich. In the medical literature of the year, Maurilocus gave an accurate description of the disorders of eye refraction and of the optics of the lens; Pierre *Franco* introduced his method of high lithotomy for dealing with stones of the urinary bladder; and William *Gilbert* made his first discoveries of the phenomena of electricity.

Europeans of the year 1610 first heard of the idea of *savings banks.* The mysterious *Rosicrucian* Order originated in the same year. During the year with the aid of his *telescope, Galilei* made his most important astronomical discoveries. He saw the four satellites of Jupiter, the phases of Venus, the sunspots, and he discovered the nature of the Milky Way. In the same year Van *Helmont* defined the gases; *Minderer* prepared ammonium acetate ("spiritus Mindererri"), and *Guarinoni* described syphilitic gummas of the brain. The first successful Cesarean section was performed by *Trautman* and Seest. In America, on November 3, 1610, Hudson discovered the *Hudson Bay.* In the early part of the year, the primitive Virginia colony had its *first physician;* he was Lawrence Bohune, a medical employee of the London Company.

On November 28, 1660, the Royal Society of London published its first minutes. Otto von Guericke made a *"water barometer"* which was several stories tall. From the fluctuations of the water in the long tube, he was able to foretell the onset of a severe storm. In the field of medicine, *Schneider* repudiated the old Galenic doctrine that the nasal secretion comes from the pituitary. *Malphigi* discovered the capillary anastomoses, and *Willis* described puerperal fever as a disease unit. In Boston, the *oldest house* was built in 1660, which was later purchased by Paul Revere. In the same year (at Natick, Mass.) the first *Indian church* was established by John Eliot.

In 1710, the building of *St. Paul's* cathedral was completed in London. The Upsala Royal Scientific Society was founded at the same time. York, England, built a hospital, and Berlin opened the *Charité Hospital.* At the Trinity College in Dublin a *School of Physics* was established. A smallpox epidemic in London quickened the introduction of the English *Quarantine Act.* Among the scientific discoveries of the year we find the preparation of prussic acid (Diesbach), the description of new cartilages in the larynx (Santorini). *Littré* proposed a new method of artificial anus by the opening of the sigmoid. *Anel* suggested a technic for the ligation of aneurysms. *Morant* introduced a method for exarticulation at the shoulder joint. *Du Petit* promoted the doctrine of contralateral innervation of the body organs, and *Hamilton* discussed the nature of miliary fevers.

Whether Benjamin Franklin invented the *rocking chair* about 1760 remains a debatable question. In that year, the Royal Norsk Scientific Society was established. *Pallas* observed the echinococcus worm in the liver. *Goulard* suggested that lead had curative effect for cancer; a number of non-official lead

preparations are still kept under Goulard's name in the U.S. Dispensatory (Goulard's cerate; G.'s water). In the U.S., William *Shippen* commenced his anatomical lectures in Philadelphia, and New York City saw fit to regulate the medical practice by law.

The first *saving bank* in Ruthwell, Scotland (where else first?), was founded by a clergyman in 1810. The bank accepted small deposits, and paid cumulative interest upon them. In this year, Europe built its first successful *steamboat*, and Germany invented the printing press with *revolving cylinder* (F. König). London obtained gas street lights, and chartered its *Gas Company*. In France, Nicolas Appert acquired a patent for the *canning of food*. In 1810, the center of gravity of Europe's medical knowledge was in *Berlin*, with such men as Karl Ferdinand Graefe, the surgeon, of Christoph Wilhelm Hufeland, the internist and propagator of "macrobiotics." In his honor, a society was founded in 1810. In Vienna, the Eye Clinic was the attraction for foreign students who came to listen to Georg Josef Beer, director of the clinic from 1810 on. *Davy* prepared corrosive sublimate, and *Wollaston* isolated cystine from urinary calculi. Readers of medical magazines found the original descriptions of such conditions as astigmatism of the eye (Fischer), typhus and typhoid (Hildenbrand), heart rheumatism (Wells), tubercle (Bayle), and the suggestion that pellagra was due to too much corn eating (Marzari).

For the U.S., the year 1810 had several novelties. The first *carpet mill* was established at Frederick City, Md., to make ingrain carpets on hand looms. By this time a *glass worker* in Pittsburgh was able to manufacture glass crystal chandeliers. The first had six lights and "prisms casting showers of rainbow." He sold it for $300.—The first *screw factory* opened at Bellefonte, R.I., and the first *silk mill* began to make silk by machinery. Thomas Brown, later Florida governor, invented the *mailbox*; it had a series of pigeon-holes with glass fronts and numbers on them so that people could see whether there was any mail for them.

The year 1860 brought the *singing telephone* to Germany, the *ice-making* ammonia-absorbing machine to France. The Berlin Medical Society, and the Torino Veterinary Medical Institute are also a hundred years old. In München, the canalization started, and England brought laws against *adulteration of food* and milk. *Louis Pasteur* announced in 1860 at the Paris Academy of Sciences that "the dust particles suspended in the air are the exclusive origin, the first and necessary condition of life in the infusion." He then suggested that a serious study be made to detect the pathway of diseases by this mechanism. Here was the first primitive idea of a microbic theory of contagious diseases.

Other *medical discoveries* and inventions of 1860 were the antiseptic nature of carbolic acid (Lemaire), the preparation of cocaine (Wöhler), the coccygeal gland (Luschka), Balantidium coli, construction of an esophagoscope, subcutaneous sublimate injections (Hebra), trichinosis (Zenker). Duchenne wrote on bulbar paralysis, Czermak on rhinoscopy. Donders constructed spectacles for astigmatism, and Schultze introduced his method for the resuscitation of infants.

A hundred years ago, a man started to sell a certain brand of plantation bitters in the U.S.; after a few years, he advertised it under the formula: "S.T. 1860 X." After much discussion, the mystified customers learned that this meant: "Started Trade in 1860 with 10 dollars." That year, New York City demanded *fire escapes* on the tenement houses after a serious fire in which many persons perished. In New York, the first *traffic police squad* was organized, the "Broadway Squad," with the special function of traffic regulation. Their posts were on the sidewalks, and they got busy when the slow moving horsed vehicles entangled in traffic jams. In 1860, gold was discovered in *Idaho*, and the first *"pony express"* was set in motion between St. Joseph, Mo., and Sacramento, Calif.

Numerous smaller U.S. colleges will have their centennial birthdays, also the Wheaton

College (Illinois), the Louisiana State University (Baton Rouge), and the University of California (Berkeley). On June 23, 1860, the *Government Printing Office* was created by law; it began to function next year. It is also noteworthy that the first chair for hygiene and physical education was established at Amherst College, soon to be occupied by Dr. Edward Hitchcock.

Part 2: Memorable Lives

Our centennial or millennial homage could start this year with 460 B.C., when *Demokritos,* the laughing philosopher of Abdera, and *Hippokrates,* the father of medicine, were born. They were contemporaries, and supposedly also met each other. According to the legend, Hippocrates had to examine Demokritos whether the philosopher was as crazy as people said him to be. Both these famous luminaries of Greek science reached a very ripe old age. Aside from laughing at the follies of mankind, Demokritos asserted that the Universe was made up of atoms and Void. The Void, the Space, was infinite in extent, and the atoms infinite in number. He considered the atoms eternal, solid, uniform in substance, and incapable of changing. Thus, he not only became the founder of the "atomistic theory," but also he announced the conservation of matter. His system was later developed by Epicuros and Lucretius (about the latter see our 1957 Calendar).

Hippokrates (460 B.C.-370 or 377 B.C.), the father of medicine, was born on the island of Cos. His medical education and knowledge was acquired at the side of the priests in the temple of Asklepios at his native island which became the most famous among such temples in the 5th century B.C. But he also travelled much, and spent his later life in Thessalia and Larissa. Beside a treatise on the history of medicine, another on the office of the physician, and in addition to the famous Oath of the Physician, he is held to be the personal author of a great number of medical works which altogether represents the entire framework of medicine, of medical action, including the diagnostic acumen and the prognostic judgment. Whether he was the true author of all the works which are circulated with his name remains a question of secondary importance. The most essential is that in Hippokrates we find a well-developed level of medical knowledge. He and the Coan School dissociated medicine from divine healing, systematized existing knowledge, guided the bedside manner and the ethical standard of the physician to the highest level and purest quality. One of the greatest virtues of Hippocratic medicine is that it has a holistic view of man and of his disease, indeed, it always emphasized that man to be considered in relation to his whole environment. The basic principle of Hippokrates was to heal the sick rather than to study the nature of the disease. Hence, he remains the ideal of the practitioner forever.

Aspasia, the celebrated Grecian courtesan and the mistress of Perikles, was a contemporary of Hippokrates. She died in 410 B.C. She was well versed in politics and philosophy of her days, and her eloquence attracted the élite of Greek society in her court; even Sokrates became her friend; yet she preferred to marry a rich cattle-dealer. From the third pre-Christian century we mention Erasistratos, Aristarchos and Apollonius, all of them connected with the famous Alexandrian School. *Erasistratos* (b.310 B.C.) may be justly called the founder of physiology, and his anatomical studies and vivisections had a tremendous bearing on the question of the circulation of blood. He saw the heart as a pump, but he thought that the arteries carry the blood from the liver to the heart, and the veins from the heart to the lungs. *Aristarchos* (b.310 B.C.) was a great astronomer in Alexandria. Long before Kopernikus, he put forward the heliocentric hypothesis, and had a clear understanding of the vastness of Space. *Apollonius* (b.260 B.C.), a mathematician, was a successor of Euclides in Alexandria, and his title to fame rests in his study of the "Conic sections." We are still using some of his terms such as "parabole," "ellipse," and "hyperbole."

In the Roman Antiquity, let us make a reference to *Lucullus* who was born in 110

B.C. (more about him in our 1957 Calendar). In 60 A.D., *Juvenal,* the last Roman satirist poet, was born. His poems in dactylic hexameters were to expose the vice at Rome at the end of the first century of the Christian Era. In dark, lurid, sometimes revolting colors he mercilessly depicts the corruption in Rome, the decay of the great noble houses, their women, and the immoral new class of the freedmen. The early years of the Christian Era bring up such figures as *Tertullian* (b.160), learned Christian philosopher; *St Gregory,* the Wonderworker (b.210); *Joannes Cassius* (b.360), founder of a monastery in Marseilles; *Pelagius* (b.360), heretic British monk; *Rufinus* (b.410), a father of the Catholic Church; *Proclus* (b.410), *Neo*-platonic philosopher in Athens.

Most outstanding from the first half of the Middle Ages are the figures of *Isidore* of Sevilla (b.560), and of *Rhazes* (860-932). Isidore was a Spanish scholar and the archbishop of Sevilla who wrote a medieval encyclopedia, the "Etymologies" in which he briefly touched on all sciences, including a survey of medical terms. For this reason, some medical bibliophils are willing to pay exorbitant prices for early 15th century editions of this rarity. *Rhazes,* or Abu Bakr Muhammed Ibn Zakariya ar-Rhazes, was born at Rai, Persia. He became a physician, and was put in charge of a Baghdad hospital. He wrote 113 greater and 28 minor treatises, in which he also described such exanthematic infections as the smallpox and measles. His greatest work is the "Continens" (el-Hawi in Arabic) which is a truly great systematic comprehension of medicine. Rhazes shows himself a great clinician in his works who ranks with Hippokrates, Araeteus, and Sydenham in the originality of his pathographies. Theoretically, he was a Galenist, but practically he imitated more the ways of Hippokrates. Commonly he is referred to as the "Arab Galen." (More than two decades ago I had the opportunity to study briefly a 10th century copy of a part of the el-Hawi, and recommend its purchase for the U.S. government.)

Two famous medieval personalities in the medical circles were *Henri of Mondeville* and *Trotula,* both of a 1260 birth. Henri was one of the four body surgeons of Philip, the Fair, and a teacher in 1304 at the Montpellier University. About the time when Dante began to write his *Divina Comedia,* Henri started to compose a surgical work in which he urged cleanliness for the avoidance of the suppuration of wounds. He also recommended music to keep up the spirit of the patient during sickness and operations. They say that Mondeville was a hard businessman. *Trolula,* or "Dam Trot," was probably the wife of the elder Platearius, or a personification of the sage women experienced in medicine, teaching mid-wifery and gynecology at the Salerno Medical School. Among the Salernitan textbooks and codices we find a gynecological treatise ("De passionibus mulierum") which is ascribed to Dame Trot.

The fifteenth century was the age of travels and discoveries. Prince *Henry,* of Portugal, who died in 1460, did not travel himself but he conceived grandiose plans for forming a "Greater Portugal" by colonizing the Azores and the islands of the Madeira group, and by conquering the "wealthy land" which lay beyond the Sahara. He sent expeditions to Guinea and to the Gambia River, being desirous to conquer Bilad-Ghana and to convert the natives to Christianity. But as a crusader he was also engaged in slave-trade (he captured some Negroes and sold them to other African Negro tribes). Famous explorers and voyagers of 1460 birth-year are also: Pedro *Cabral,* who saw Brazil and Calcutta; *Vasco da Gama,* who passed around the Cape of Good Hope to the East Indies along the African coast, and became viceroy of India; Juan Sebastian *Del Cano,* who as commander of the "Concepción" of Magelhaens was the first to circumnavigate the earth by sailing westward; *Ponce de León,* Spanish explorer, originally with Columbus, later governor of Hispaniola, who—in search of Bimini, the island of fables, on which the fountain of youth was said to be located—discovered Florida in 1513. On his second trip to the

Peninsula, however, he was wounded by a poisoned arrow and (in spite of the fountain which the St. Augustiners are proudly demonstrating even nowadays) he died in Cuba. Bibliophils of early 16th century books will recall the memory of Johannes *Frobenius* (b.1460), learned printer at Basel and a friend of many great renaissance scholars, whose printing press issued about 300 works in the early years of the 16th century, some of them of medical nature.

Sando *Botticelli* died in 1510 in his sixties. His frescos, madonnas, religious and mythological paintings ("Adoration of the Magi," "Birth of Venus," "Primavera") remain the delight for human eyes forever. A number of eminent medical men were born in the same year:—Ambroise *Paré*, in France; Gianfilipo *Ingrassia* in Italy; John *Caius*, Thomas *Phaer* and William *Turner* in England. Pareé, first a barber, then eminent surgeon to several French kings, joined the French Army in 1537 as regimental surgeon, and during the various campaigns in which he participated he improved surgical technic so much that he is justly regarded the greatest military surgeon and the father of modern surgery. He wrote several works, one on the treatment of the gunshot wounds, for which he abandoned the cautery and substituted treatment with an ointment which he composed of turpentine and the yolk of eggs. In 1552, he recognized that in amputations the ligation of the arteries is better than cautery. He was a protestant by religion, and during the massacre of St. Bartholemew's night his life was saved by his king, Charles IX. who hid him in his own closet. Paré had a simple faith in the healing power of God, and his favorite saying was: "I dress him, but God cures him" ("Je le pansai, Dieu le guarist"). *Ingrassia* was professor of anatomy at Naples and Padua, and was called the Italian Hippokrates. Under the term "rossania" he described scarlet fever; he also discovered an ossicle (stapes) in the human ear. *Caius* was practitioner in England, and benefactor of Cambridge College. He graduated at Padua where he was associated with Vesalius. After his settlement in London, he was nine times elected president of the College of Physicians, and, though he was a loyal Catholic, he served as body physician to three English rulers. He published a small book in which the peculiar "English Sweating" (Sudor Anglicus) was described, a disease somewhat resembling rheumatic fever. Shakespeare put him in his "Merry Wives of Windsor" as a stage character. *Phaer* became famous by a health booklet ("Regiment of Life") a part of which is the first pediatric work in English. *Turner* excelled as an ornithologist, and is also called the father of English botany.

In 1560, the Genovese people lost their liberator, Admiral Andrea *Doria*. In Wittenberg, Philip *Melanchton* (alias Schwarzerd), humanist and the collaborator of Luther, died. He possessed vast learning. He was a moderate protestant, desiring to reconcile Protestantism and Catholicism, and thus to attain Christian unity. His mother asked him once what, in view of the religious disputes, she should now believe. He replied: "Go on mother to believe and pray as you have done, and never trouble yourself about controversies." In Spain, Andrés *Laguna*, the "Spanish Galen," died in 1560; he was physician to Charles V.

Among the medical men of the 1560 vintage we mention Kaspar *Bauhin*, and Wilhelm *Fabry*, of Hilden. Bauhin was professor of anatomy, botany, medicine and Greek at the Basel University. In an anatomical work he described the ileocecal valve ("valvula Bauhini"). His chief merit was that he introduced the natural classification and the binomial nomenclature of plants at a time when the language of botany reached a confusion of Babel. Fabry (or Fabricius) was the leading surgeon of his times, and the inventor of many surgical instruments. In fact, he gained his knowledge at the battlefield, and described a field chest for the Army's use. He was the first to amputate the thigh, and to extract an iron splinter from the eye with a magnet. He is justly considered the father of German surgery.

In 1610, *Henry IV*, King of France, was

assassinated by François *Ravaillac*, a bankrupt schoolmaster and fanatic, who had a personal hatred against the king. Though the king was obnoxious to many, others thought him to be the most human and sympathetic among the French kings. The assassin was born asunder by four horses. Two Dutch painters were born in the same year; Adrian *van Ostade*, who liked to depict village life, farmyards, barber shops in a style influenced by Rembrandt, and David *Teniers*, the Younger, who as a genre painter is especially charmful in his pictures of joyous open-air life. John *Pell* (b.1610) was the English mathematician who introduced the "plus" sign in England and the so-called Pellian equation ($x^2 - Dy^2 = 1$). But all his knowledge of mathematics could not make him rich; and at his old age, he was often confined to the King's bench as a debtor.

On 27 September, 1660, *Vincent de Paul*, French Roman Catholic priest, died. He was outstanding by his benevolence, zeal, and genius for practical charitable organization. In 1600, soon after his becoming a priest, he was sold as a slave in Tunis. Later, his foundations were hospitals for the foundlings in Paris, and the orders of the Lazarists and of the Vincentian Sisters of Charity who are now doing nursing work in many hospitals of the world. Vincent de Paul was canonized in 1737. Other notable deaths of 1660 were Diego *Velazquez*, painter of the Spanish Court, and Sir Thomas *Urquhart*, translator of Rabelais, who had so many debts that once his whole library was seized and sold.

Four physicians stand out among the celebrities born in 1660: Thomas *Dover*, and Sir Hans *Sloane* in England, Friedrich *Hoffmann* and Georg Ernest *Stahl* in Germany. Dover, whose adventures we mentioned in the 1958 Calendar, was once the servant of Sydenham. His name became the eponym of an opiate powder. Sir Hans Sloane was a physician and naturalist who collected many animal and plant specimens during his travels in Europe and in Jamaica. He graduated at Leyden as a medical doctor. Ten years later (1693) he was already Secretary of the Royal Society. Then, he became the physician-general of the British Army, and soon the perpetual president of the College of Physicians. He had a huge collection of books and manuscripts (50,000 volumes and 3560 MSS) which became the nucleus of the British Museum. He was the first English physician who became a lord. Hoffmann and Stahl both were professors at Halle. *Hoffmann*, the physician of Friedrich I, of Prussia, was the most outstanding representative of the iatromechanical school. He believed that an ether-like vital fluid is present in the nervous system and acts upon the muscles, giving them "tonus." His works include a full description of chlorosis. His name will forever live in the Hoffmann's drops (1 part ether and 3 parts of spirit of wine). *Stahl*, also a body physician of the Prussian king, was a vitalist, too, believing that the body was a dead substance which was animated by the soul. He also elaborated the phlogiston theory for the explanation of combustion of inflammable materials; the phlogistan was supposed to be "fire in a fixed state." This theory was overthrown later by Lavoisier.

Among the deaths of 1710 we find Philippe *Verheyen*, physician and anatomist at Louvain. He was a peasant boy, and even at 22 years of age, he was still working the field with his father. He acquired great reputation as an anatomist, but his four children did not inherit any wealth from him. The Count of *Saint-Germain* was probably born in the same year. He was an occult scientist and adventurer who claimed that he was actually 2,000 years old. He got into the best circles of Europe, perhaps because he bragged that he owned the "stone of the wise" and the "elixir of life." In Italy, Giambattista *Pergolesi* was born in 1710, composer of operatic and instrumental music; but he is mostly remembered for the "Stabat mater" which he composed a short time before his death at the early age of 26. Much longer life was the share of William *Heberden, Sr.*, London physician, who wrote on nyctalopia, distinguished chickenpox from smallpox, and described a "disorder of the breast," which he

called "angina pectoris." His name is borne by the nodules which deforming arthritis causes on the distal phalanges of the fingers. In the United States, in the year 1710 Jonathan *Carver* was born in Connecticut. His parents wanted him to become a physician, but instead he entered the Army where he served as an officer in the French War. From 1766 on, he spent his life as an enterprising traveller, exploring North America, Minnesota, and the Lake Superior region, and reaching cross country as far as the Pacific.

Two hundred years ago (1760) Jacob *Winslow*, Danish naturalist and human anatonomist, died. He designated the greater and lesser sympathetic chains, and described a communication ("foramen Winslowi") between the greater and lesser sacs of the peritoneum. The communists will probably commemorate the bicentennial birthday of François E. *Babeuf*, who was a product of the French revolution and a supporter of the Reign of Terror. He conspired to overthrow the Directorate, and to establish a communistic society. He wanted to nationalize the large business enterprises, then to take away all private property, and to abolish inheritance. Food and clothing was to be the same for all, except for differences in sex and age. He called himself "Gracchus" after the idealistic leader of the Roman proletariat. The conspiracy was discovered, and Babeuf was condemned to the guillotine. Among the artists of bicentennial birthdays we mention Claude *Rougt de Lisle*, engineer Army officer and composer at Strasbourg, whose "War Song for the First Army of the Rhine" became the celebrated Marseillaise; Madame *Tussaud*, Swiss modeler in wax, who began to model the head of the leaders and victims of the French revolution, and founded a permanent exhibition in London which was also connected with a Chamber of Horrors.

Particularly interesting for the United States are the bicentennial birthday anniversaries of Mathew *Carey*, Count *Saint-Simon*, and of Caspar *Wistar*. Carey was an early leader of American economic thinking. Count Saint Simon was a Parisian of optimistic thinking who also participated in the American Revolution. Caspar *Wistar* was a native of Philadelphia, of German extraction. He inherited some wealth, and he began to teach and practice medicine in his native city. His "system of Anatomy" was the earliest anatomical textbook published in this country. A vine, "Wistaria," and the Philadelphia Institute of Anatomy and Biology were named in his honor.

A century and a half separate us from the death (1810) of *Chevalier d'Eon*, French political adventurer, who until the end of his life was wearing women's dresses by a decree of Louis XVI; his true male sex was settled by a post-mortem examination. In the same year the Austrians shot to death Andreas *Hofer*, Tyrolese patriot peasant leader and the liberator of Innsbruck. The world of science and medicine lost Henry *Cavendish*, experimental chemist and physicist, who discovered hydrogen (1760), found nitrogen, and from H and O successfully synthetized water with an electric spark. He was a silent, solitary man who spent most of his life in chemical laboratories, and died unmarried, leaving more than a million pounds to his relatives. One of the *Montgolfier* brothers (Joseph) who built the first practical balloon, also died in 1810. French medicine lost Jean Louis *Baudelocque*, obstetrician, whose reputation was based upon his instrument for the measuring of the pelvic dimensions of pregnant women.

The list of illustrious notables with the 1810 birthyear includes in the United States Phineas Taylor *Barnum*, showman, who opened an "American Museum" for curiosities, and finished his life, with a wealth worth five million dollars, as co-owner of the Barnum and Bailey circus. Theodor *Parker* (1810-1860), unitarian clergyman, was an antislavery agitator, and the promoter of John Brown's raid. Among the writers and musicians born in 1810, we recall the memory of Alfred de *Musset*, once a medical student, then French poet and writer of many short stories and dramas in the manner of the romantic school (he was one of the many beaus of George Sand). Otto *Nicolai*, German composer, wrote the comic

opera "The Merry Wives of Windsor." Another German composer, Robert *Schuman* (b.1810) has been already referred to at time of his death's centennary (see 1956 Calendar). Distinguished scientists of the same vintage are:—Eugene *Belgrand*, hydrographer engineer, designer of the Paris sewers; Henri *Reynault*, French chemist and physicist, the first to determine the respiratory quotient; Marie *Sappey*, anatomists of the lymphatic system, in Paris; Friedrich *Bidder*, physiologist at Dorpat ("Bidder's organ"); William *Little*, eminent orthopedic surgeon and founder of the Royal Orthopedic Hospital in London, who described congenital cerebral spastic diplegia ("Little's disease"). David *Gruby* was a native Hungarian physician who settled in Paris where he became the greatest mycologist. He described a number of fungus diseases and fungi (Achorion, Trichophyton(Micro-sporon, Oidium). The word "trypanosoma" is also his creation. Joseph *Hyrtl* was anatomy professor at Wien; it was his invention to inject blood vessels and organs, and to let the adjacent organs be eaten away by an acid (corrosion technic). Bernhard *Langenbeck* was the greatest clinical surgeon at his time in Berlin. He devised many orthopedic and plastic operations, founded the German Surgical Society, and started to publish the leading German journal of surgery (in 1861: "Archiv für klinische Chirurgie").

Other famous scholars and medical men who deserve a sesquicentennial birthday celebration are:—Jean *Quatrefages*, French anthropologist, craniologist and ethnologist; Ludwig *Türck*, laryngologist in Wien, who had some merits in introducing the laryngoscope into clinical practice; Gabriel *Valentin*, physiologist at Bern, and discoverer of the cell nucleolus; Theodore *Schwann*, who—together with Schleiden—was the founder of the cell theory. His activities also included physiology and histology. He studied the laws of muscular contraction, discovered pepsin, and described the neurilemma sheath ("sheath of Schwann") of the nerve fibres. The Russians will celebrate the life of Nikolai Ivanovich *Pirogov* (1810-1881), the greatest Russian surgeon, and a great military surgeon. He was professor of the Medico-Chirurgical Academy at St. Petersburg, and he organized the surgical services in the Caucasian Campaign and in the Crimean War. In this war, at the time when the English troops were aided by the spirit of Florence Nightingale, Pirogov had also introduced female nursing through the aid of the Grand Duchess Helena Pavlovna. Pirogov was the first to use ether anesthesia in Europe. He considered that war is an epidemic of injuries. In the surgical technic, one of his most widely known methods is the complete osteoplastic amputation of the foot. His biographers say that "he was of the stuff of which glories are made."

For the United States the year 1810 brought Asa *Gray*, who graduated as a medical doctor, but he gave up medicine for the pursuit of botany. As a botanist, he travelled, collected and studied in the U.S. and in Europe, described the American plants, and was the leading botanist at Harvard for many years. In his botanical writings he severely opposed the doctrines of Darwin. His memory is perpetuated in the American Hall of Fame. Another noted American of 1810 birth was John M.*Riggs*, who described pyorrhea alveolaris ("Riggs' disease") and introduced a heroic treatment for it. He was the dentist who extracted the teeth in the original experiments of Horace Wells under nitrous oxide anesthesia.

One hundred years ago (in 1860) the obituaries listed: Sir Thomas Makdougall *Brisbane*, Scottish soldier and governor of New South Wales, who in his spare time catalogued thousands of stars of the Australian heaven and was honored by having a city named after him; Prince *Miloš*, leader of the Serbian War of Liberation, and creator of modern Serbia; Count István *Széchényi* (b.1791), Hungarian statesman and soldier, who was the leader in the modernization of his country, by introducing the credit system, the steamboats for the navigation of the large Magyar rivers and lakes, and who opened the Danube for international navigation. He could not stand the political

strains of his times, his mind became obscured and he committed suicide. Arthur *Schopenhauer,* German pessimist philosopher, died in 1860. He had a great influence upon his contemporaries, and still greater one upon subsequent generations. He put his whole mistrustful and suspicious nature into his system of thought according to which the world was only the phatasmagoria of the individual brain, and hence true knowledge was impossible. The medical world lost, in 1860: Thomas *Addison,* physician at Guy's Hospital in London, who described pernicious anemia and the disease of the suprarenal glands known by his name; James *Braid,* Manchester neurologist and pioneer of scientific hypnosis, who showed that—in addition to other manipulations of Mesmerism—gazing upon a bright object alone was sufficient to produce self-hypnosis (Braidism); John *Lizars,* naval surgeon and Edinburgh professor, who did the first ovariotomy in Great Britain; Martin *Rathke,* German anatomist, who described the origin of the pituitary ("Rathke's pouch"): Andreas *Retzius,* comparative anatomist and ethnologist in Stockholm, famous for his craniological work.

In the United States, Charles *Goodyear,* the well-known inventor of the vulcanization process, died in 1860. His invention made possible the development of the entire rubber manufacturing industry. Among the medical obituaries of 1860 in the U.S. we find Walter *Brashear* and Charles *Frick.* In 1806, Brashear, as a young surgeon at Bardstown, Kentucky, performed the first successful hipjoint amputation in this country; he first amputed the thigh, then disarticulated the hip socket. He took almost 50 years to prepare a report about it for the Kentucky Medical Journal. Charles Frick practiced in Baltimore, and devoted much time for the study of kidney diseases and urinary calculi.

Centennial birthday celebrations will be due to such political figures as Raymond *Poincaré,* French writer and President; Ignacy *Paderewski,* Polish pianist, composer and statesman; Theodore *Herzl,* Austro-Hungarian Jewish journalist, and the founder of Zionism ("Der Judenstaat," 1896). The world will recall Maria *Bashkirtsev,* Russian painter and the writer of a "Diary"; Isaac *Albéniz,* composer of Spanish suites, and the Austrian composers Gustav *Mahler* and Hugo *Wolf.* The world of science will celebrate the centennials of such men as Edward *Buchner,* German chemist and Nobel-Prize winner; Theodore *Reinach,* French numismatist; Per *Rydberg,* famous botanist, both in Sweden and in the United States.

Many are the 1860 births among the medical notables. We mention Émile C. *Achard* for his studies on hirsutism, diabetes, and paratyphoid fever; Joaquin *Albarran,* French urologist of Cuban descent; Sir William M. *Bayliss,* for his various physiological studies; August *Ducrey,* for discovery of the bacillus of chancroid; Willem *Einthoven,* Dutch physiologist and Nobel Prize winner for his string galvanometer and electrocardiography; Niels R. *Finsen,* Danish Nobel Prize winner, for his phototherapy; Waldemar *Haffkine,* Russian bacteriologist, benefactor of India and of the whole world, for his vaccines against cholera and plague; the biochemist John S. *Haldane*; The German laryngologist Gustav *Killian,* for his bronchoscopic technic; the Italian dermatologist Vittorio *Mibelli* (his angiogeratoma, porokeratosis); Franz *Nissel,* German neurologist, who described changes in the ganglion cells after nerve injuries; Georg *Sticker,* for his history of epidemic diseases; Isidor *Traube,* for his theory of surface tension; Henri L. *Vaquez,* for his description of polycythemia vera. Anton Pavlovich *Chekhov* (1860-1904), a descendant of serfs, was a Russian playwright and fiction writer, and a physician, but he practiced little. He used to say: "Medicine is my lawful wife, and literature is my mistress." In his "Dreary Story" (1887) he described a Russia where the poor suffered from want, the rich from idleness and boredom. In his concise style, which resembles that of Maupassant, Chekhov depicted Russian life as monotonous and boring in which one day was very much like another. In his plays, such as Cherry Orchard (1904) and Uncle Vanya (1902) he

showed himself a realist. It is said that as a physician he aimed at the betterment of the poor, and his welfare projects included even a People's palace in Moskva.

In the United States, centennial birthday celebrations will bring back the figure of John Joseph *Pershing,* commander of the American Expeditionary Forces during World War I. *A. Sperry* (d. 1930) was an American electric engineer who invented a dynamo and various electric devices, and organized companies for the production of gyroscopic compasses, stabilizers for ships, etc. The American medical profession in general, and many of us personally, well remember the life of such centennial celebrants as John M. *Baldy,* who made the first excisions of the stomach in this country; David *Bergey,* whose bacteriological manual in its various editions has been in use since 1901; Nathan E. *Brill,* describer of "Brill's disease" (1910); James M. *Cattel,* psychologist and editor of several serial publications of the American Association for the Advancement of Science as well as of several reference works on "American Men of Science"; William H. *Howell,* hematologist at Johns Hopkins; Rudolph *Matas,* of New Orleans, who introduced a new method for the suture of aneurysms.

This year's most outstanding man among the centennial medical celebrities of America is Leonard *Wood* (1860-1927) who entered the U. S. Army Medical Corps in 1886. He had a very exceptional career for a military surgeon. He was a good friend of Teddy Roosevelt, and cooperated with him in the organization of Roosevelt's "Rough Riders," a regiment of which he commanded as a colonel in 1898 during the Cuban incident of the Spanish-American War. Then, he was appointed Military Governor of Santiago, Cuba, and Mindanao (1899-1902). In 1910, he was Major General, and served then four years as Chief of Staff of the U. S. Army. In the subsequent years, Republican politicians made him twice a nominee for the Presidency of the United States (1916 and 1920), and he finished his illustrious life as the Governor General of the Philippines (1921-1927). He kept his interest in medical affairs to the end of his life. He will surely remain history's unique example for a medical officer in the U. S. Army who was ever considered as presidential timber.

Part 3: Memorable Books

The 1960 commemorative list of literature is not very extensive. From the early renaissance we mention the date 1510 when Ludovico *Di Varthema,* Bolognese traveler and writer, started the composition of his *"Itinerario"* in which he reported his observations during five years of travel in Egypt, Southwest China, India and the Malay Archipelago. In 1710, the Berlin Academy of Sciences decided to publish a series in Latin under the title *Miscellanea Berolinensia.* The first volume included 58 articles from all fields of science twelve of which were written by Leibniz, president of the Academy. This Academy was planned to be the center of a network of other European scientific associations, but jealousy among scientists frustrated the plan.

In 1760, a booklet was published in Boston. Jared Eliot wrote it, and it included six *Essays on Field Husbandry in New England.* This is considered the first book on agriculture which was published in America. Another American agricultural first was issued in 1810 at Georgetown, D.C., which was then an independent city. It was the journal called *Agricultural Museum.* The Rev. David Wiley edited and published it, but the serial ceased a few years later.

Fifty Years Ago

Fifty years ago we read in the newspapers that Edward VII died, and George V ascended the English throne. In Portugal, the licentious Manuel II was forced to abdicate. In France, the *Seine* flooded Paris for a week, destroying $200 million worth of property. Japan annexed Korea, and renamed it *Chosen.* In the U.S., New Year's day of 1910 brought State-wide prohibition to Tennessee. Congress voted on the *Immigration* Act in March, barring paupers, anarchists,

criminals, and diseased people from the U.S. The White Slave Traffic Act, briefly called the *Mann Act* after its author and advocate, was also passed. It included prohibitions "for any immoral purpose." Thus, open prostitution began to disappear in 1910 in many U.S. cities.

In June 1910, *New Mexico* and *Arizona* were authorized to form state constitutions and governments. In November, Woodrow *Wilson* resigned as president of Princeton University, and won his election as Governor of New Jersey. That year, *Teddy Roosevelt* returned from his big-game hunting, and from his visits at the European kingdoms. He was expected with ardor, as the anti-Taft "Life" expressed it:

"Teddy, come home, and blow your horn;
The sheep's in the meadow, the cow's in the corn;
The boy you left to attend the sheep
Is under the haystack fast asleep."

In 1910, people first read about *"scientific management,"* a phrase which Louis D. Brandeis concocted in his criticism of the U.S. railroads. Soon it was picked up by Taylor, Philadelphian engineer, who became an ardent preacher of business reorganization and efficiency (*Taylorism*). Fifty years ago, Andrew Carnegie launched a project which he believed would have the effect of mobilizing world sentiment for peace and would make war impossible. He gave ten million dollars to be used for abolition of international war. The institution became the *Carnegie Endowment for International Peace."* The U.S. *Bureau of Mines* was also established in that year.

Fifty years ago, *marriages* in the U.S. were ten times more frequent than divorces, and colleges graduated fewer people than nowadays. Most *deaths* were due to heart disease (158.9 pro M), tuberculosis (153.8 pro M), and pneumonia (141.7 pro M), also to diphtheria, scarlet fever and typhoid fever. *Cancer* was less frequent than nowadays, while the rate of *suicide* (15.3 pro M) was about the same as today.

In 1910, *smoking* was still unusual for American women. At a White House reception the wife of the Russian Ambassador, Baroness Rosen, wished to smoke, and she asked President Taft for a cigarette. Taft asked his military aide, who procured one from the leader of the band. Taft graciously lit a match, and held it for the lady. About 1910, the lower hem of *women's skirts* began to climb upwards. In that year the hem advanced from about the malleolus up as far as the shoe-top. This was partly a "must" for the ladies who drove their own automobiles. In that year, namely, the automobile *self-starter* was improved and put on the market. In the era of hand-cranking, women drivers were few; but, with the self-starter pedal, they had to sacrifice only a few inches of their stylish long skirts, without losing their dignity and charm.

Allusions to *freudism* began to appear in the lay press of 1910, with much angry disapproval of the theory which was entirely contrary to religion and subversive of every existing decent concept of love and romanticism. The average American, still under the spell of the Edwardian Era's mentality, could not imagine anything more repellent than the theory of the Jewish Freud which looked upon everything with the most leering and cynical sexuality, even upon the religious devotion, the Crucifix above the alter, and the smile of the baby in the cradle. The intrusion of freudism in 1910 also meant the end of the "Age of innocence, literary and human." Freud and his three slogans, Inhibition, Complex, and Libido, began to work on American marriage and love life until even the children in the kindergartens started to know all about plain, uninhibited sex. At the same time, the world became alarmed at the ravages of the two *main diseases* associated with sex life. Until 1910, their existence had been ignored in print. Then, about this year, with the official suppression of open vice, warnings appeared about the sexual diseases, and their medical names were more and more often read in the papers, together with discussions of the scandals arising from surreptitious commercialized prostitution.

The streets of the larger American towns were filled with the *melodies* of such favor-

ites as "All Aboard for Blanket Bay," "Under the Yum Yum Tree." Barbershop Quartets liked the tune of "Down by the Old Mill Stream." The Irish preferred "Mother Machree," especially when John McCormack, the great Irish tenor, was singing it. One of the great songs of the year was *"The End of a Perfect Day,"* the story of an aching heart in music. The author was Mrs. Carrie Jacobs-Bond, who wrote it while motoring with her friends in California, traveling up to the top of Mt. Rubidoux. More than five million copies of the song were sold, and the composer became rich. The song remained a favorite for millions, including the wife of President Harding, and in later years the tune was often played as the closing number on White House programs:

"Do you think what the end of a perfect day
Can mean to a tired heart,
When the sun goes down with flaming ray,
And the dear friends have to part?"

Around the year 1910, the waltz eclipsed, and gave way to a vogue of more jerky dances. It was *the rag-time,* the previously disapproved dance which became legitimate through the efforts of favorite musicians, especially of Irving Berlin (Israel Baline) who in 1910 wrote *"Alexander's Ragtime Band."* With its syncopated swinging jubilance, it was soon picked up by New York, and the streets became noisy with:

"Come on, and hear, Come on, and hear, Alexander's Ragtime Band;
Come on and hear, Come on and hear, it's the best band in the land;
And if you care to hear the Swanee River played in ragtime,
Come on and hear, Come on and hear Alexander's Ragtime Band."

Victor Herbert's "Naughty Marietta," and Puccini's "The Girl of the Golden West" had their *premiers* in 1910 in New York. the latter under the guidance of David Belasco. Douglas Fairbanks appeared on *the stage,* and made himself admired for his ability to spring from the center of a stage to a balcony. At a New York theatre, Marie Dressler appeared in "Tillie's Nightmare" the 300th time. The musical "The Chocolate Soldier" also had many houses.

The U.S. was reading the *stories and novels* of Mrs. Barclay, Mary Roberts Rinehart, and of a number of highly paid novelists, among whom Jack London was perhaps the most outstanding. By 1910, many millions of copies of Omar Khayyam's *"Rubaiyat"* were laying on parlor tables all over the country. Millions of its verses adorned cushions, wall papers, and deck cards. The epicurean philosophy of this oriental classic had more appeal to the teen-agers of 1910 than the austere Ten Commandments of the Bible. In May of the year, great commotion was caused by the advent of *Halley's Comet.* It had been predicted that the Earth would go through the comet's tail and perish. People in the West went to their cyclone cellars, and on May 18 many workers stayed at home in the industrial centers to spend their "Last Day" with their families. But the comet passed the sun, the Earth continued to rotate, and on Dec. 14, 1910, Amundsen, the Norwegian explorer, reached its *South Pole.*

Fifty years ago, a number of *universities,* institution and societies were created, such as the Queensland University, the Pasteur Institute in Algier, the Psychoanalytical Society of Berlin, the Austrian Society for the Prevention of Cancer, the State Serum Institute in København, the Veterinary Medical School at Lisbon. About this year, Ivan Pavlov started his experiments with the *conditioned reflexes.* We have read in the medical journals about extravital culture of nerve fibers (Harrison), the *tissue cultures* of Carrel, estimation of hydrogen-ion concentration (Hasselbach), subacute bacterial *endocarditis* (Libman), *histamine* and its biological effects (Dale), experimental production or *poliomyelitis* (Flexner). Vedder of the U. S. Army described the amebicide action of *emetine,* and Ehrlich—together with Hata—introduced "606" (*Salvarsan*) in the treatment of syphilis.

In the United States, many *colleges opened* their doors the first time (Mississippi Southern, Southern Methodist University of Dallas, Tex., etc.) In Philadelphia a medical research chair was established, and in New York the first school of chiropody was or-

ganized. At Minneapolis, a garden was planned for *medical plants*. Columbia University instituted the first course of public health nursing. Various *health commissions* were established such as the Rockefeller Sanitary Commission for the Prevention of Hookworm, the U.S. National Committee for the Prevention of Blindness, and the Illinois State Commission for Industrial Diseases.

The glorious period and peak of the U.S. *railways* was in 1910. There were 1800 railway lines, some 180 were not longer, however, than eight miles, and many had only dwarf roads. (No wonder that Brandeis criticized them for bad management.) In 1910, *aviation* progressed in the U.S. with big steps. Curtiss arranged a race between an airplane and a train from Albany to New York. His company also organized an airplane *flying school* with free instruction to military officers. Merchandise was first transported by airplane from Dayton to Columbus, Ohio. For the aid of navigation, Congress passed the *Wireless Ship Act* which required that wireless equipment (radio) should be carried on all passenger vessels with 50 or more human beings present. Already in January, 1910, people could hear a *broadcast of the "Tosca"* opera direct from the stage.

In 1910, the *Postal Savings* Banks were authorized by the President, and the first postal savings stamps were issued. The *Boy Scouts of America* was incorporated in Washington, D.C., and the *Camp Fire Girls* also began their activities. People started to celebrate *Father's Day* (June, 1910). The first movie newsreel, the *Pathé Weekly*, was seen from November 1910 on. A rayon industry plant was established in Pennsylvania, and the electric washing machine was also perfected (by A. J. Fisher). In 1910, the Postal Telegraph System first used a telephone typewriter (*Teletype*).

The world of 1910 mourned Henry *Dunant*, creator of the Red Cross, and Florence *Nightingale*, who made nursing a part of the history of the Crimean War. Henry *Rousseau*, French painter, and Count Leo *Tolstoy* were other international losses of the year. The medical profession lost many outstanding specialists such as F. *Kohlrausch*, E. F. *Pflüger*, E. *Zuckerkandl*, Angelo *Mosso*, the physiologist of the Alps, F. *Recklinghausen*, and Robert *Koch* (about him, see more in 1954 Calendar).

In the United States, William Sidney *Porter*, writer under the pseudonym "O. Henry," and Samuel Langhorne *Clemens*, better known as "Mark Twain," died to the regret of the entire world. Mary Baker *Eddy*, founder of the Christian Science movement, was 90 years old when she died. The scholars deplored the death of William *James*, American psychologist, and of Howard T. *Ricketts*, parasitologist and public health officer whose name is perpetuated in the "Rickettsia" group of microbes.

* * *

The brief glance through these memorable events and lives, discoveries and other achievements, as any panoramic view of history, makes us almost agree with the pessimist Schopenhauer that "the life of every individual, if we have an opportunity to survey it as a whole . . . and only lay stress on its most significant features, is really always a tragedy." Would it be then true that nothing at all is worth our striving, our efforts and struggles?

It is true what Hippokrates said, that our life is short and that it is full of obstacles and difficulties. But, regardless of how short it is, the only thing a healthy man will ask for is not so much happiness as an opportunity to exercise his capacities. History teaches us that we need a resistance to raise us, and we need obstacles to try out our strength and to stimulate our growth. Life without tragedy would be unworthy of a man, or—as the philosopher puts it—

"To overcome difficulties is to experience the full delight of existence."

(Schopenhauer: *Counsels and Maxims*).

Head Nurse Leadership Role*

By
MAJOR MARY J. BERG, ANC

TRADITIONAL roles of all those in the nursing profession have been changing rapidly. Some of these changes have been due in part to the impact of two world wars in the past half century, others to the upward swing in world population and to the accident and hospital insurance policies that have become almost a necessity to our way of life today. Over the past fifteen years in particular, hospital inpatient load has become so great that it takes nursing personnel of many levels of experience to give these patients necessary nursing care.

The increased patient load and the influx of nonprofessional personnel required to augment the professional nursing staff have forced the head nurses into a leadership role. It is this leadership role that interests us today.

The role of the head nurse in the hospital situation is one of the most important positions in the nursing field. One of the reasons for its importance is that the person occupying this position directs the activities of those giving total patient care. She is the administrator within her unit; she has a part in policy making; she is the liaison between nursing service administration and the nursing unit. Even though she is on the first step on the administrative ladder, she is still part of the nursing group, and is in the position of extending her loyalty to both groups.

You notice that I refer to the head nurse as "she." I am not ignoring the fact that male nurses are now a part of the Army Nurse Corps, or that they have been for many years a part of civilian nursing staffs. Many of them are outstanding head nurses and leaders in their fields of specialization. My use of the female pronoun is for one reason only, lack of a better word that would apply to both.

Let us think of the definitions of the word "leader." A leader is the head of a group, the one who guides, directs, manages, and shows the way. Can you picture the head nurse in each of these definitions? Let us look then at the kind of a person she must be, what she must do, and some of the tools she must use in order to accomplish this leadership role.

Whether the unit she heads is large or small, the fundamentals of leadership are the same. Even in the smallest unit there must be a group of five or more personnel for functioning purposes, and as a result, must be guided in order to give good patient care within the unit.

Some of you are asking yourselves the very thing I have heard expressed so often, "What does she mean, five or more people? There are just myself and a corpsman on my ward."

Let us stop for a minute and think, "Are there just yourself and a corpsman?" The first person you have eliminated in making this statement is the patient. Without the patient there would be no need for a head nurse or a nursing unit. The patient is the reason for our being.

Then too, does your guidance as a head nurse start at 0700 hours and end at 1500 hours? No, the head nurse is responsible for the nursing care of all patient personnel and for the personnel assigned to give that care twenty-four hours each day, seven days a week, fifty-two weeks a year.

What kind of person must the head nurse be in order to accomplish this? She must keep herself informed at all times. She must have a strong personality, she must be understanding, she must be firm in her convic-

* Presented by Major Mary J. Berg, ANC, Supervisor, Nursing Service, Walter Reed Army Hospital, on September 23, 1958 during workshop on "Medical Nursing" held at Walter Reed Army Institute of Research, Walter Reed Army Medical Center, Washington 12, D.C.

tions, and two of the most important points of all: she must have a knowledge of people and an insight into personalities.

A definition of a head nurse taken from "Function, Standards, and Qualifications for Practice," published by the American Nurses Association in 1957 is as follows: "A head nurse is a professional nurse who is responsible for providing care and improving nursing service in an organized nursing unit." This is a simple definition but when we think of what the head nurse must be, know, do and the tools she must use to assume this head nurse role, we know it's not a simple, but a complex role.

Responsibilities to Patient and Family

In order to meet the total nursing needs of the patient she must have a thorough knowledge of the diseases for which the patient has been admitted to the unit, a knowledge of the background and the effects of these diseases on the individual. The head nurse can accomplish this by outside reading, attendance at in-service programs, accompanying the physician on ward rounds, and conferences with the ward officer.

The head nurse must also be interested in the social, spiritual, and emotional aspects of these patients. She can obtain some of the information from the patient's history, but some of it will be brought out in conversation with the patient by the head nurse while making her rounds or by some of the other ward personnel as they go about their duties. Some of the talking and listening can be done while a bed bath is being given, during a treatment, or during a chance visit to the bedside. It is through the head nurses' example and teaching that her personnel will be able to recognize, out of a chance conversation, a need or desire that would mean improved nursing care for an individual patient.

Just to give an example of why all personnel, regardless of their status, should be aware of the importance of these chance conversations I would like to tell you of one of my own experiences along this line. Shortly after I came to Walter Reed Army Hospital, I was assigned as head nurse on a women's unit consisting mostly of category one and two patients. This unit was provided with hospital custodial service. Because of the outstanding work of the previous head nurses, all of the unit personnel were well trained. One morning a patient with the diagnosis of acute cholecystitis was being admitted by litter. She was moaning and groaning so that we heard her even before we saw her. She was put into bed and examined by the ward officer who tried, but could get little information as to medical history or background. The nurses were not any more successful in quieting her.

By this time the ward officer had read on the admission notes that she was an Italian war bride whose husband was in Korea. Thinking that her reaction might be hysteria from pain and possibly fright over being hospitalized in a strange environment, he ordered a sedative. When the nurse left her after giving the medication, a member of the custodial service went in, he said, to clean the floor, and in a few minutes came running into my office and said, "Major Berg, I know what's wrong with that woman and making her yell like that. Her kid is home alone in the house." I said, "Are you sure?" and "How do you know this?" He said, "When I went in there I thought if I talked to her she would get quiet faster. You know a lot of ladies like to talk while I clean. I started out asking her how many kids she had? She started to yell louder and said she had one boy, only four years old, and he was home alone."

On investigating we found that the patient had been abruptly taken from her home without knowing what had happened to the child. We contacted the Social Service Officer who, through the Red Cross in Arlington, was able to report back that a neighbor, who was also a friend, had taken the child into her home and would keep him until the mother was released from the hospital. When the mother was given this information we had a relieved and cooperative patient, thanks to a member of the custodial service.

The patient's family must always be taken into consideration. The family is a factor in the total care of the patient and must be included in the nursing care plan and patient education. How many times do you hear, "The patient is no trouble at all; if it weren't for his mother, father, wife, or some other family member, we wouldn't know the patient was on the ward!" Do we just consider this person as a thorn in our side and ignore him? No! This is your guide for a part of this patient's nursing care. Give this family member the psychological support he or she needs and you are rendering care to the patient. Listen to what they have to say, don't let it fall on deaf ears, for like the member of the custodial service, they may assist you more than they realize.

Responsibilities to Personnel

Let us leave the patient and his family for awhile and concentrate on the responsibilities of the head nurse to her personnel. When most of us chose a career in nursing, we thought only of the actual nursing care we would give a patient who was too ill to care for himself. Many of us chose nursing in preference to a teaching career. Many felt that teaching in any manner was one of the last things they wanted to do. Today we must forget these thoughts and feelings.

Over the years, as trends in nursing have changed and more non-professional personnel have been added to our hospital staffs, the head nurse finds herself in the position of a teacher. This has been difficult for some nurses to accept, but accept it we must as teaching is as much a part of nursing as is the actual care given at the bedside.

There is the on-the-job training that must be carried on daily at the head nurse level. It is her responsibility and requires her leadership to carry out an intensive program. This program consists of a close relationship with the trainee, with teaching at the bedside itself. It includes, among other things, observing and directing the bed bath; cleaning the patient's unit; feeding the patient; positioning the helpless patient, both for the purpose of comfort and prevention of pressure areas; and assisting patients in and out of bed. We must also instruct the trainee to assist the physician with physical examinations and any treatment or tests carried out by the physician where the nonprofessional may be trained to assist him. The matter of on-the-job training is a never-ending daily process and must be repeated again and again as new personnel are assigned to the unit.

Paralleling the on-the-job training program, the head nurse must also have continuous refresher classes for her other personnel. Some of these classes may be planned for and may be on a formal basis. This is most necessary particularly in small hospitals where the Table of Organization does not call for a nurse in the training section. In larger installations, such as here at Walter Reed, at Brooke, Letterman, or at some of the Class I installations where a training coordinator is on the staff, formal refresher classes are made available. This does not mean that the head nurse can disregard these personnel in a training program at the unit level. They can be included in demonstrations; they can be checked frequently in an informal manner as to techniques, they can be observed particularly if they are assigned to render intensive nursing care to a patient. This definitely can be used as a teaching situation.

When we entered the service a number of us had had several years of civilian nursing experience. During the past two years graduates who have completed their nursing education under the auspices of the Army Student Nurse Program have been commissioned into the Army Nurse Corps. This is their first nursing experience at the graduate level. These young women are eager to assume their nurse responsibilities but they look to the head nurse as the experienced person to lead and guide them. It is the responsibility of the head nurse, and through her example, that of her nurse associates, to assist these young officers with nursing procedures that may be still unfamiliar to them;

to orient them to their responsibilities to the corps, the hospital, the patients, and their co-workers.

Those of you who are not members of the military establishment may be interested in knowing that the first year of military nursing for these young nurses is a planned in-service experience on a rotation basis in the clinical areas of medical, surgical, surgical recovery room, pediatric and obstetrical nursing. This is designed to familiarize them with military hospitals and their complex routines and regulations; to enable them to gain a wider clinical nursing experience, and to help them choose a clinical nursing specialty. If any of you have been fortunate enough to read the evaluations rendered by these young nurses, following each rotation of service, then you know they look to the head nurse as the clinical specialist to assist them. Each and every one of these experience evaluations speak of the head nurse. If they feel that their experience has been helpful to them, they give her the credit. If they feel they did not profit from the experience on a certain ward unit, they invariably give the reason as lack of interest on the part of the head nurse. At the end of the year when the young nurse indicates the area of her interest in specialization it most often is in the clinical area where the workload had been the heaviest, but in reviewing her evaluations you also find that the head nurse in that unit had given her the supervision and guidance she needed. Remember these young women are our head nurses of tomorrow and the manner in which they are guided today will influence the type of head nurse they will become.

Orientation of all new personnel to the unit is part of the teaching program of the head nurse. This must be for both professional and non-professional personnel. It must include a tour of the unit; introduction to co-workers and patients; orientation to ward routines; hospital and nursing policies and procedures. A map of the hospital plant with locations of other services, clinics and departments should be included. Newly assigned personnel should be on day duty at least ten days before being assigned to the evening and night tours of duty. When possible they should overlap the regularly assigned personnel on these tours. This point is agreed upon by many nursing services and is included in their nursing service policies. The unit orientation should cover from two weeks to one month in time. Although the program is the responsibility of the head nurse, she may have assistance from her other staff members. This is particularly true of the ward master who can participate where the non-professional staff is concerned. One area where the wardmaster can be, and most frequently is, most helpful is that of supply and maintenance. This is definitely an area in which he shares responsibility with the head nurse and one in which he knows the how, why, and when.

In-service education at the unit level is another phase of the leadership role of the head nurse. Most of this is conducted at the morning and afternoon conferences by way of instructions relating to the care of a patient or a new treatment to be performed within the unit. It is also at these conferences that she may interpret the policies of nursing service. Some of the unit level in-service program should be delegated to other professional and non-professional personnel.

Delegating this responsibility to the non-professional creates greater interest in that group as a whole and particularly in the individual participating. Some of the subjects that could be allocated to these personnel are different phases of nursing care or treatments in which they are participating. Another might be what they know about a particular disease entity with which they come in contact daily. Then, too, the head nurse could have them demonstrate some of the mechanical equipment being used on the unit —such as the oxygen tent, the Wangensteen suction or the aspirating suction machine.

In including other professional personnel in the unit in-service programs, I mean inter-departmental personnel such as the medical officer, other nurses, the dietitian,

the physical therapist, the occupational therapist, the social service worker, and any other person within the hospital area who has a part in direct patient care.

Discussions may be five to ten minutes or more in length. They may pertain to duties or contacts involving patients on the unit or those who have just been discharged. They may pertain to the expected effects of a treatment or therapy which a patient is receiving. Even an interesting nursing care study on a patient from another unit could be presented. This type of interchange brings about a better understanding of and a closer relationship with inter-departmental personnel.

The rapport between the head nurse and the ward officer must be excellent for a nursing unit to be effectively administrated. The head nurse is the ward officer's interpreter to the patient and the unit personnel. I think many of you have had the experience of doing this interpreting, such as reassuring the patient, explaining a statement more clearly in a language the patient can understand and many times doing this over and over again. The head nurse can aid in bringing about this rapport by working so closely with the ward officer that she knows at all times what his plans are for the medical care of the patient. If there is a lack of harmony at the top, it leads to discord that will filter down to personnel and patients.

I have said many things about the head, nurse, the kind of person she should be, what she should know, and what she should do. All of this has as the end result a well administered unit with the best nursing care possible for the patient. If all of the foregoing supports are in effect, then it will not be difficult for the head nurse to allocate the type and amount of care to meet the individual needs of each patient. She will know the level at which each of her personnel can perform and the type of patient to which each should be assigned.

Patient Care Assignment

The best method of assignment of patient care we have in Army hospitals today is the DA Form 8-246, Nursing Service Assignment Roster and DA Form 8-256, Nursing Care Assignment. To use these forms effectively, all of the duties for the twenty-four-hour administration of the nursing unit should be in writing. Each group of duties, from that of the head nurse down to the enlisted person with the lowest MOS position, should be coded numerically or alphabetically. These groups of duties should be located next to the Nursing Service Assignment Roster, DA Form 8-246.

This assignment roster may be prepared a week in advance with names of personnel, hours of duty, and duties using the numerical or alphabetical code. The assignment of patient care may be added daily by room or bed number. This method permits the head nurse, or anyone else who is interested, such as the Chief, Nursing Service, or the nursing supervisor, to know at a glance where the patient care responsibility lies and where the personnel are at all times. This is extremely advantageous on a large, busy unit.

The listing of patients' names and room or bed number is essential on DA Form 8-256, Nursing Care Assignment. Following the patient's name are the nursing procedures and treatments the individual will perform on this patient. Instructions should include such things as the type of bath, number of times the patient is to be gotten up in a wheel chair, whether or not the patient needs assistance to walk, treatments, and the hours they are to be given, the hours for clinic appointments, and how that patient will be transported to the clinic.

A particular patient may have the bath and treatment carried out by a professional nurse and may be fed or transported to a clinic by a non-professional person. Another may receive practically all of his nursing care from a professional nurse, while still another may be assigned to a non-professional person. I don't feel that any patient in either a military or civilian hospital ever should receive all non-professional nursing care, because even the fully ambulatory patient has certain instructions that must be

given to him by the professional nurse and certain questions he feels can only satisfactorily be answered by the professional nurse, and these too are nursing care.

At the termination of each tour of duty DA Form 8-256, Nursing Care Assignment, is returned to the nurse in charge. These may be used at this time for evaluation of patient care, an aid in writing of nursing notes, and a teaching tool in counseling the individual in his understanding of patient care. These assignment forms are tools for a well organized unit. They eliminate the uncertainties as to whether or not tasks have been accomplished.

Evaluation and Efficiency Reports

A discussion of the head nurse would not be complete without including the importance of evaluation and efficiency reports. The rating officer for all unit personnel is logically the head nurse. She has a responsibility to the individual, to nursing administration, and to the hospital to make her reports clear, concise, objective, and all-inclusive. This will not be a problem if the head nurse has counseled her personnel frequently or when necessary over the preceding months. This counseling includes anyone on the unit who is not sharing the workload, not performing well with his co-workers, who is tardy, not neatly groomed, or does anything that might be detrimental to patient care. These people should be counseled by the head nurse and provided guidance when the incident occurs. Some individuals require more assistance than others and the head nurse owes it to the administration of her unit and other personnel working within the unit to try to give concentrated counseling and guidance to these individuals. It is important to remember that only those deficiencies in which they have failed to improve after counseling should be listed on the efficiency report.

From the initial assignment of personnel to the unit, the head nurse should keep anecdotal records. If these are kept properly as to date and time, and include a short account of the incident itself, they will be meaningful during counseling conferences. At the completion of each conference the anecdotal record should be initialed by the individual concerned. These records are again most useful at the time the efficiency or evaluation report is being made by the head nurse. The anecdotal record is strictly confidential in nature and should be seen only by the head nurse and the person on whom it is maintained. As soon as any part of the record becomes useless, that part should be destroyed, and when the individual or the head nurse is transferred out of the unit the entire record should be destroyed.

The efficiency and evaluation reports are important to the ratee and to nursing administration. They are used as a basis for promotion for both military and civilian personnel and for selections for career opportunities and, as such, should reflect a true picture of the individual and his potentials.

In closing, I would like to say, if the head nurse is the leader of a well organized nursing unit in which she has continuous orientation, in-service teaching, counseling and guidance programs, then she will have the time she needs for on-the-job training, evaluating the work performance of personnel and the effectiveness of patient care, and she will have an overall environment that is conducive to the physical, spiritual, and emotional well-being of both patients and personnel.

EDITORIAL

Survival

CONSTANT attention must be given to the problems that will arise in any attack on this nation. That advice was again given and emphasized at the Strategic Air Command Headquarters recently when The National Health Resources Advisory Committee headed by Dr. Elmer Hess of Erie, Pennsylvania, met with officials of that Headquarters.

General Thomas S. Power, SAC Commander-in-Chief, pointed out the mission of the Strategic Air Command in discouraging aggression and of dealing a forceful retaliatory blow in case of an attack upon us.

There are problems for every individual American right now. Preparations must be made not only by the military forces but by the civilians as well. Plans must be made to overcome disruption of communications, loss of supplies, separation of families, low morale, shortages of clothing, fuel, and water. Then there is the care of the injured and the sick, and, of course, the disposal of the dead. These problems were pointed out by the Medical Section of SAC which is headed by Brigadier General T. C. Bedwell, Jr.

It was also pointed out that first aid training of laymen and provision of adequate family shelter are the two greatest needs of the civil defense program.

There is practically no first aid instruction in schools and communities to offset the predicted shortages of trained medical personnel in the event of such a disaster as an attack upon our homeland. Such training is urgently needed. In such a disaster each community will have to depend on itself; each individual will have to do the utmost for himself and not depend on others. Frantically running about wringing one's hands will only add to the confusion which is bound to exist. To avoid such scenes demands training and much preparation before disaster occurs. Such training requires time and there is no better time to start than now. The days that are lost to training can never be regained. It is wise to prepare now.

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Around the World

(Ser. III, No. 15)

By

CLAUDIUS F. MAYER, M.D.

OUAGADOUGOU is one of the centers of culture which play an important role in the recent rebirth of Africa. In this African renaissance a significant event occurred last January when representatives of several West-African states met in Dakar at a sort of constitutional assembly at which they decided to bring their states together in a close political and economical association. This new association of states, including French Sudan, Senegal, the High Volta, and Dahomey, assumed the name of *"Federation of the Mali."* The name revives in essence one of the grand African states which flourished during the Middle Ages in West Africa. The original *Empire of the Mali,* according to the geographical descriptions of medieval Arab travellers and the remaining contemporary old maps, extended from the Western coast of Africa almost as far as the upper end of Nigeria. It has been a specially fertile soil for Negro-Islamic culture, particularly during the period from the 13th to the 16th centuries.

Today, geographically, the new Federation of the Mali practically coincides with the territory of the *ex-French West Africa,* having an area of almost five million square kilometers, with a population of only 17,300,000. It is a natural unit, washed in the West and in the South by the waves of the Atlantic, and in the North by the sandy ocean of the Sahara desert. It is an ancient plateau of land, intersected by several great rivers and their tributaries, the greatest among them the Senegal (1700 Km) and the Niger (4200 Km).

The *people of this area* are a mosaic, just as the people in Europe. A part of the native population is of the white race, including the Moors and the Tuaregs. The majority belong to the Negro race, all of whom are living in settlements, and are devoted to agriculture and animal husbandry. The Negroes can be grouped in two great subraces —The Sudanese or the field type, and the Guinean or the forest type. Among the Sudanese, we again find many smaller tribes with some ethnic peculiarities.

The Federation of the Mali is between the Tropic of Cancer and the Equator. Hence, its climate is a composite of the dry Saharian, the tropical, and the equatorial. More than a hundred different languages are spoken over this vast territory, not to mention the various dialects. The main linguistic divisions of the entire Africa are three: (1) the Bantu, (2) the Sudanese, and (3) the Nilotic. The Federation of the Mali belongs to the second division which again includes four large groups of languages. All in all, it is quite difficult for the European doctor or missionary to achieve his humanitarian and spiritual mission in this *polyglot population.* Moreover, this is made difficult due to the presence of organized superstition and sorcery, and to the traditional rituals of the primitive Negro society (including initiation, polygamy, etc.)

At the town of Ouagadougou, which is in the heart of the *High Volta* and has a population of about 30,000, a white missionary, Father Goarnisson, has been active in medical practice for more than 25 years. He is an M.D., and has a diploma from the Colonical Medical Institute of Paris. He is one of the less known Albert Schweitzers of Africa. He has been the director of the local *dispensary of Catholic missionaries* which, also, became the center for treating the eye diseases of the entire territory. The former French colonial administration, recognizing his abilities, made him also director of the medical laboratory of the High Volta, and charged him with the education of male nurses in dealing with the sleeping sickness, the human trypanosomiasis. Now, more than 400 such native experts have received their knowledge from Father Goarnisson.

His eye dispensary was enlarged by the Government since eye diseases are very fre-

quent in that country; patients come from all parts of the Mali Federation. The daily number of patients sometimes exceeds a thousand. The eye operations are made partly by three white nuns, who are graduate physicians, and by several Negro nuns, who specialize in eye diseases. The latter belong to the Congregation of *Black Sisters of the Immaculate Conception,* and they received their special education from Father Goarnisson himself.

To appreciate the work of Father Goarnisson in the medical education of these African Black Sisters, we have to mention that the black nuns do not speak French. They only understand their native "Mossi" language, which the Catholic father also speaks perfectly. For this reason, the Father had to transpose the ideology of the whole modern medicine into the native language of his black pupils, and he had to put it at the mental level of the young native women. He had to create *medical textbooks in the Mossi language,* to translate complicated medical terms into a language which had words only for the simple matters of life. The educational work and apostolate of Father Goarnisson in the High Volta, and similar work of other less known Catholic missionaries elsewhere in the "Dark Continent" is one of the greatest assets in the rebirth and modern reformation of Africa.

A simple demographic statistics would not do justice to the *population problems of Africa.* It would give only a distorted vision of the human realities. On the other hand, a so-called differential demography, with the indication of the birth rate and death rate of each group of people, may also show the average economical and political power estimated per person. Such a study has been recently made, for instance, for the *groups inhabiting East Africa* (Kenya, Uganda, Tanganyika, Zanzibar). The study shows that the economic and human power of some 150,000 Hindus, who are living there, is alone infinitely superior to the collective power of millions of Negroes who surround them. East Africa will become, perhaps shortly, a Hindu colony at the expense of the Europeans.

In the city of Durban there are 200,000 Europeans, 200,000 Zulus, 200,000 Hindus, and 50,000 half-breeds. In comparison with the birth rate of the Europeans, the actual birth rate of *the Hindus* is ten times higher. On the other hand, the conservation power of the Arabs is very feeble in Black Africa, although the spiritual power of the Islam is tremendous. Thus, new composite cross-breeds will emerge in Africa such as the *Hindu-African,* and the "Cape-Colored," a mixture of Malayan and Hottentot, and the European-Bantu. In South Africa, the segregation to which they are submitted stimulates them to a *conquest by "vegetative growth,"* a biological compensation which cannot be reached by the politics. The only defense the Europeans have against this "danger" is a refusal of any political rights to the cross-bred elements. It seems that meanwhile the true Negroes of Africa can hardly escape *their destiny to serve* eternally as slaves, emancipated or otherwise, to all the other groups. The systematic nationalism, which has created and will create new African states independent from the Whites, seems to prepare the advent of new masters who may arrive from any other continent.

Social Security in Great Britain, according to the original scheme of the liberal Lord Beveridge, was supposed to be such a perfect institution that it would provide insurance from birth to death against almost every conceivable human vicissitude. The system has been recently *analyzed by a financial* expert of the Wall Street Journal (W. H. Chamberlain) during his recent visit to the British Isles. As it is well known, the scheme of Lord Beveridge was enacted into law by the Labor Government which ruled Britain for six years after the war. It provides for maternity benefits, children's allowances, sickness and unemployment benefits, widow's pensions, allowances for guardians of orphaned children, old-age pensions, death grants, and health treatment which is free in the sense that the taxpayers as a whole are paying for it with heavy levies. Government officials who hand out these benefits admit that they are far from being adequate for their professed purpose

and they were supposed originally to be only supplements to individual savings and private pension schemes.

Inflation and high direct taxation have, however, seriously *undermined the ability* of the individuals to *provide for their own future.* The system is supposed to be financed out of the worker's weekly contribution of about $2.50 half of which is paid by the employer. In case of sickness, or unemployment, the worker is entitled to about $7 a week. Expectant mothers get the same amount weekly. Widows receive an allowance of $8.40 for three months. A man over 65 years of age or a woman over 60 may retire on a $7 weekly pension. All this is rather low, even according to the British standard of living.

The *British National Health Insurance* is not compulsory. Anyone may go to a private physician for treatment. Even in the system itself, there is allegedly no interference with clinical treatment. Moreover, the system is administered by regional hospital boards which are run by volunteer citizens. A doctor is paid $2.52 for a visit; if he has more than 500 visits, he will get additional bonus after each visit. However, he cannot have more than 3500 visits a year. Dental treatments are paid according to a different scale. About 95% of the people are using the free service. Among Britain's doctors, 23,000 joined the service, and 5,600 preferred to stay out of it.

The health insurance system has been called by some malicious Britons a "state-subsidized hypochondria." Indeed, physicians complain that a great number of their visitors come with trivial and/or *imaginary ailments,* which takes away a lot of time from attending the seriously sick. Some of those who could use the system will stay away from the crowded offices of doctors because they do not want to stand in long queues and do not wish to be pushed around like robots.

The most serious condemnation of Britain's health system is offered by the *poor condition of the hospitals.* Since the end of World War II, only one new hospital was built. The old hospitals are said to be badly managed, and to be *hotbeds of cross-infections,* where some surgeons express doubt about the sterility of their instruments. Lord Beveridge himself, in a recent speech during his election campaign, had to admit that his dream of social insurance does not work smoothly because, since 1946, when his Report was put in force, there has been inflation. The benefits and pensions are not large enough and the service expenses are tremendous, due to the fall in the value of money. This makes the entire British social security unreal.

Hospital sterilization again became a problem in England. In the *Portsmouth area,* surveys were made about the sterilization practices in that region. To the horror of everybody, conditions were found showing the relapse to the days before Florence Nightingale. Checks for sterility revealed that 17% of the sterilized syringes, 21% of the instruments, 36% of the bowls and receivers, and 24% of the contents of drums were contaminated. Ward boilers are unable to sterilize efficiently; equally ineffective are the so-called antiseptic solutions for cutting instruments.

According to the statistical figures of the *Canadian Army,* the *leading cause of death* in all three Services has been—with the exception of aircraft accidents—the motor vehicle accident. Deaths by drownings and by coronary infarctions are the next major cause. In the years 1953-1957, the average death rate of motor vehicle accidents in all Services was between 42 and 72 per 1,000 servicemen.

Scientific research in Switzerland is encouraged by the *Swiss National Funds for Scientific Research.* This institution was created in August 1952. Its top manager is a Council which includes representatives of all universities, national scientific collectives, Federal and Cantonal authorities, chief cultural institutions of the country, etc. Until the end of 1956, the National Funds allocated money for the support of 1,273 separate research projects, and encouraged more than 1,300 scientific collaborators, several of whom then entered the academic career. These people published their research results

in more than 3,500 books and articles. The type of support which the National Funds gave was either a stipend for the scientist, or a subvention for the research project, or the support of costly and voluminous publications. Among the receivers of supports were 75 physicians and 175 *medical research projects.* It is estimated that about seven million Swiss francs would be needed to keep up with the growing demands of the rapid development of Swiss science.

The effect of *natural forces upon demographic* conditions is well-known. An Italian medical statistician found, for instance, that general paralysis (metalues) is relatively higher in the malarial regions of Latium than in the non-malarial areas. Another recent demographical study, which made a comparison of the death rate from tumors and of neonatal mortality in various Italian islands (Ischia, Capri, Afragola), seems to indicate that the *natural radioactivity of the soil* and of the atmosphere *in Ischia* has a certain natural therapeutic effect upon malignant tumors so that they become less malignant and have a longer course, permitting a longer life. (NOTE: Similar studies on the effect of radioactive and thermal springs upon cancer appeared also in the reports of the Balneological Laboratory of Okayama University, Japan, a few years ago.)

It seems that the establishment and the spread of *rural health units* is causing much unemployment among the rural doctors *in India.* In the Province of Bengal, at the last conference held by the physicians at Bishnupur, the president of the conference described the *miserable state* of the rural practitioners. Those who can, try to leave the rural practice and seek a teaching job or employment in agriculture. Many of them are half-starved, unshaven, with shrunken cheeks, and with miserable dress. How could they inspire hope and relief among the sick people? In West Bengal also, the situation of unemployment of doctors is very serious. This province has too many physicians, and it seems desirable to curtail the students in the medical schools.

For about a year, *a Division of Public Health* has been functioning at the Central Office of the Commonwealth Department of Health in *Canberra.* The new division coordinates a wide variety of activities in the field of public health, especially those which concern the Australian National Health and Medical Research Council (such as incidence of diseases, causes of mortality and morbidity in Australia, study of preventable factors, liaison with all other health agencies and institutions).

Southeast Asia is becoming more and more industrialized. Hence, the *problem of industrial health* comes more and more to the foreground. The total population of this region is estimated to be 500 million, of whom 22 million are already industrially employed and more than 160 million are economically active. Yet, medical treatment facilities are available only in some large factories, on plantations, in government offices, in irrigation and construction works, in mines, etc. Full-scale industrial medical service exists only in large undertakings. These are few in Southeast Asia. In *Indonesia,* for instance, more than 9,700 among the industrial undertakings are small (i.e., employing less than 500 workers). Only 10 physicians are fully trained in industrial medicine among the Indonesian doctors, though an occupational health institute is active at Djakarta. There is only one medical inspector of factories in Indonesia.

In November 1958, a 17-day *conference* was held at Paoting, Hopei Province, in China, which reviewed the past work of *traditional Chinese medicine* and discussed the possible methods for the integration of western and traditional medicine. From such an integration, Chinese leaders hope that a new Chinese medical science will arise. During the meeting an exhibit showed new editions of ancient medical classics, houses built of different kinds of herbs, etc. One of the old-time doctors displayed a cup, the so-called *Tze Hsia cup,* which was an heirloom in his family. The cup is made of 21 kinds of medicinal herbs, and 2-3 cups of wine drunk from this cup each morning are supposed to promote health and longevity! (Quod erit demonstrandum!)

A recently reprinted short article written

by a former Hungarian physician who happened to stay at Budapest during the critical days of October 1956, is a sort of *medical history of the Hungarian October Revolution.* This uprising resulted in fighting on the streets where the number of the dead was larger than the number of the surviving wounded and injured. The nature of street fighting was such that the wounded could not be carried away within any reasonable time, not even to the nearby established first-aid posts or to the hospitals. Hence, many who could have been saved died, in the absence of effective help. This explains partly the terribly pitiful statistic of casualties during the *street fighting in Budapest.* The bloody turn which the revolution took came as a surprise to the population. They did not think of armed fighting, just of a mute demonstration. At that moment, the civilian defense and the hospitals of the city were almost completely unprepared for the tasks which had to come with a bloody uprising. The very small medical organization which was available for ordinary assistance for the civilians played a very insignificant role during the entire revolution.

The street fighting of Budapest had a special character. The front line fluctuated. Smaller and larger areas of the city, sometimes only a few houses, or a residence, became *isolated for hours or days.* The transportation of the wounded was meanwhile very difficult, often impossible. The ambulances with medical personnel and material were blasted by the Russian troops while on their calls; they often had no chance to get near their destination. Under such conditions, it was essential for the individuals to take over the responsibility for *the care of the wounded* under very primitive conditions and with little knowledge of first aid. Often, even the simplest facilities for binding or dressing the wounds were unavailable.

Of course, there is no guarantee that *similar situation* would not also develop in the thickly populated cities of other countries *in the course of a future war.* This makes it absolutely essential that the aid for the sick and wounded should be so organized in our civilian defense that the organization could fulfill its tasks even under similar conditions in wartime. Consideration must be given to the fact that the wounded may *remain without medical care for several days.* With such a possibility, of course, the present type of peace-time first aid instruction is too meager to deal with such a situation. The injured have to rely upon people who do not have gas or electricity and who often have no chance to get in contact with persons trained in first aid. Hence, everyone of us should be in the position to improvise for the first-aid. One should be taught the simple measures which can be successfully used in the treatment of shock (warm cover, fluid intake, stimulants, painkillers, etc.).

Another very real problem is the *evacuation of the wounded.* This can be done only after proper care for the removal of pain since uncontrolled pain during transportation may elicit shock and may cause death. Everyone should know what to do for fractures for large injuries of the soft parts, and for bleeding. The experience of the Budapest street fighting also showed that a much larger amount of dressings and bandages is necessary than is ordinarily estimated for combat. The plasma requirement was also much higher at Budapest than one would theoretically expect. The difficulties were further enhanced by the fact that most hospitals were damaged by Russian bombs. The work had to be continued in the basements and cellars where operating rooms had to be improvised under very primitive conditions.

In a recent article on ergotamine *treatment of migraine,* a British author advised the doctor readers that, in addition to the drug therapy, they should "see that the patient *regulates his life to a steady pattern,* free from severe anxieties and stress." In a Letter to the Editor of the B.M.J., a London physician wonders "How does one do it?" To put a migraine patient into a pattern of life which runs steadily without fear and inner stress, in supplementation of the drug therapy should the physician also give "the patient 3,000 pounds a year, a harmonious spouse, beautiful, placid children, and interesting but steady work, and, of course, the 'Telly' (TV)?" . . . *Multa paucis!*

The Sir Henry Wellcome Medal and Prize

COMPETITION FOR 1960

THE competition is open to all medical department officers, former such officers, of the Army, Navy, Air Force, Public Health Service, Veterans Administration, The National Guard and the Reserves of the United States, commissioned officers of foreign military services, and all members of the Association, except that no person shall be eligible for a second award of this medal and prize and no paper previously published will be accepted.

The award for 1960, a medal, a scroll, and a cash prize of $500, will be given for the paper selected by a committee composed of the Association's vice-presidents which reports on the most useful original investigation in the field of military medicine. The widest latitude is given this competition, so that it may be open to all components of the membership of the Association. Appropriate subjects may be found in the theory and practice of medicine, dentistry, veterinary medicine, nursing and sanitation. The material presented may be the result of laboratory work or of field experience. Certain weight will be given to the amount and quality of the original work involved, but relative value to military medicine as a whole will be the determining factor.

Each competitor must furnish six copies of his paper which must not be signed with the true name of the author, but are to be identified by a *nom de plume* or distinctive device. These must be forwarded to the Secretary of the Association of Military Surgeons of the United States, Suite 718, 1726 Eye St. N.W., Washington 6, D.C., so as to arrive at a date not later than 20 June 1960, and must be accompanied by a sealed envelope marked on the outside with the fictitious name or device assumed by the writer and enclosing his true name, title and address. The length of the essays is fixed between a maximum of 10,000 words and a minimum of 3000 words. After the winning paper has been selected the envelope accompanying the winning essay or report will be opened by the Secretary of the Association and the name of the successful contestant announced by him. The winning essay or report becomes the property of the Association, and will be published in MILITARY MEDICINE. Should the Board of Award see fit to designate any paper for "first honorable mention" the Executive Council may award the writer life membership in The Association of Military Surgeons, and his essay will then also become the property of the Association.

NOTES

Timely items of general interest are accepted for these columns. Deadline is 1st of month preceding month of issue.

Department of Defense

Ass't Secretary (Health & Medical)—Hon. Frank B. Berry, M.D.

Deputy Ass't Sec'y—Hon. Edw. H. Cushing, M.D.

ARMED FORCES

The strength of all the Armed Forces as of October 31 was estimated as 2,497,834.

The Selective Service has been asked to obtain 7,000 men for January—2,000 less than for December. These men are for the Army.

FORENSIC PATHOLOGY

A short course in Forensic Pathology is being given at the Armed Forces Institute of Pathology, Washington, D.C., from January 18-22. The course is for pathologists and will cover such subjects as: military law, sudden death, obscure homicide, gunshot wounds, burned bodies, death due to asphyxia, problems of identification, criminal abortion, cutting and stabbing, death by poisons, pathologists in court, trace evidence, and trauma and diseases.

This very important course will be open to pathologists of the Federal Medical Services and civilian physicians.

LEGION OF VALOR

Holders of the Medal of Honor, the Distinguished Service Cross, or Navy Cross are eligible for membership in the *Legion of Honor*, an organization of America's top military heroes. Further information may be obtained from Major Frank Sargent, OCINFO, Room 2D621, The Pentagon, Washington 25, D.C.

Army

Surgeon General—Lt. Gen. Leonard D. Heaton

Deputy Surg. Gen.—Maj. Gen. Thomas J. Hartford

SURGEON GENERAL'S MEETING

The Surgeon General's Medical Conference will be held at the Sternberg Auditorium, Walter Reed Army Medical Center, February 18 at 8:00 P.M. The speaker will be Lt. General Sir Alexander Drummond, Director General of the Medical Services of the British Army.

General Drummond was presented with Honorary Membership in the Association of Military Surgeons of the United States when he visited the Walter Reed Army

U. S. Army Photo

Shown at a recent Surgeon General's Conference are (L to R): Former Surgeon General Norman T. Kirk, U. S. Army; the present Surgeon General of the Army, Lt. General Leonard D. Heaton; and the President's physician, Major General Howard McC. Snyder, U. S. Army.

Medical Center in 1957. At that time he spoke on "Military Medical Problems in Britain Today." This address appeared in MILITARY MEDICINE, Volume 121, September 1957, (163-173).

ASSIGNMENTS SGO

Lt. Colonel Martin Putnoi, MC, recently assumed duties as Chief, Officer Procurement Branch, Office of the Surgeon General. He holds a Master of Hospital Administration degree from Baylor University. He is a member of the American Hospital Association and is a nominee of the American College of Hospital Administrators.

Major Gordon W. Briggs, MC, was recenty appointed Assistant Chief Medical Consultant, Surgeon General's Office. He is a graduate of Tufts University Medical School.

Major Ollie W. Plunkett, ANC, has succeeded Lt. Colonel Elizabeth L. Breitung, ANC, in the Medical Plans and Operations Division, Surgeon General's Office, as nursing methods analyst.

RESEARCH

Brig. General Joseph H. McNinch, MC, Commanding General of the Army Medical Research and Development Command recently stated, "It is the policy . . . . to authorize and encourage a reasonable degree of freedom of research" . . . but . . . "unless an investigation, not related in some way to the Medical Service mission, has extremely bright prospects of contributing to the advancement of medical science it is difficult to justify its support with Army Medical Research and Development funds."

There are seven Army medical research units in the United States: Walter Reed Army Institute of Research, Washington, D.C.; U. S. Army Prosthetics Research Laboratory, Washington, D.C.; U. S. Army Medical Unit, Fort Detrick, Md.; Medical Equipment Development Laboratory, Fort Totten, N.Y.; U. S. Army Medical Research Laboratory, Fort Knox, Ky.; U. S. Army Surgical Research Unit, Fort Sam Houston, Texas; and the U. S. Army Medical Nutrition Laboratory, Fitzsimons Army Hospital, Denver, Colo.

COURSE FOR VETERINARIANS

Veterinary Aspects of Nuclear Medicine will be offered in 1960 at Walter Reed Army Institute of Research, Washington, D.C.

This new course presents the most recent data on nuclear medicine as it relates to veterinary food inspection activitites. The subjects include radiobiology, radiochemistry, and radiopathology.

ADENOVIRUS VACCINE

"Beginning in the near future adenovirus vaccine will be given to all new recruits." This is the statement of Lt. Colonel Joseph W. Cooch, MC, of the Office of Preventive Medicine, Office of the Surgeon General of the Army.

During the winter months respiratory disease attacks 80% of the new recruits of the Army. Many of these infections are caused by the adenovirus, of which there are 16 strains which have been isolated. However, only two types, 4 and 7, are considered to be of major importance. The vaccine is intended to prevent infections of these two types.

Colonel Cooch has emphasized that this is not the long sought vaccine for the common cold. Use of this adeno-virus vaccine is expected to reduce the number of man-days lost to the service because of respiratory infections.

TRAINING IN INDIA

Army preventive medicine specialists will be trained at the Calcutta School of Tropical Medicine and Hygiene in India by a recent agreement with that school which has as its Dean Dr. R. N. Chaudhuri.

The first officer to participate in this program which will be for a three month period is Major Jerome H. Greenberg, MC, on duty in the Office of the Surgeon General. He will study such major communicable diseases as plague, cholera, dysentery, and

smallpox—diseases that are almost nonexistent in the United States.

APPOINTED TO ADVISORY COMMITTEE

Colonel Joseph L. Bernier, DC, USA, Chief, Oral Pathology Division of the Armed Forces Institute of Pathology has recently been appointed to a special advisory committee by the State Commission of Health for New Jersey.

This committee is to assist in the conduct of a study entitled "The Epidemiological Follow-up of the New Jersey Dial Painters" which the New Jersey State Department of Health is undertaking in conjunction with the Atomic Energy Commission.

Several hundred persons, previously employed as dial painters in the New Jersey area, are the subjects of this study which is designed to investigate the long term effects of the body burdens of radium and other radio-active materials. Localized effects in the jaws and teeth have been shown to be of major importance.

HONORED

Colonel Maurice J. Fletcher, Director of the U. S. Army Prosthetics Research Laboratory, Walter Reed Army Medical Center, Washington, D.C., was awarded the Holley Medal for 1959 for "an act of engineering genius" at the Annual Meeting of the American Society of Mechanical Engineers.

Colonel Fletcher's work in developing an improved artificial hand led to his selection for the award.

RECEIVES AWARD

Colonel Ruth A. Robinson, AMSC, Chief of the Army Medical Specialist Corps, recently received the American Occupational Therapy Association's Award of Merit for contributing to the occupational therapy profession and establishing precedents both for the profession and for its practitioners.

GRADUATES

Thirteen dental officers of the Army and three from allied countries received certificates of graduation recently after completing a four-month advanced dentistry course at Walter Reed Army Institute of Research, Washington, D.C. The Director of the course was Colonel Thomas A. McFall.

Those who were presented diplomas by Major General James M. Epperly, Chief of the Army Dental Corps, were: Majors Everett T. Nealey and Marcel A. Polz; Captains John Carr, Simon Civjan, Thomas H. Davis, Merle I. Fehl, Dan S. Ferguson, Merlyn B. Johnson, James H. Karr, Claude R. Miller, Jr., Samuel C. Morgan, Milo R. Safar, and Dwight L. Tynes. Allied graduates were Lieutenant Colonels Gil M. Alejandrino (P.I.), John G. Butler (Canada), and Major Sabri Gokkaya (Turkey).

ASSIGNMENTS—ENVIRONMENTAL HEALTH LABORATORY

Three officers have recently been assigned to the Army Environmental Health Laboratory upon completion of postgraduate training in civilian educational institutions: Major Frank G. Favorite, Jr., MSC, Chief of the Entomology Division (Ph.D., Univ. of Md.); Capt. William F. Gilley, MSC, Sanitary Engineering Division (M.Sc., Johns Hopkins Univ.); Lt. Arthur Hyman, MSC, Industrial Hygiene Division (M.A., University of Michigan).

NEW ASSIGNMENT

Colonel Marco R. Bonsignore, MC, formerly Post Surgeon and Commanding Officer, Army Hospital, Aberdeen Proving Ground, Md., has assumed duties as Port Surgeon and Commanding Officer, U. S. Army Hospital, Bremerhaven, Germany.

At his previous station he was awarded the Army Commendation Ribbon with Metal Pendant, which was presented to him by Major General Holger N. Toftoy.

JOINS FITZSIMONS STAFF

Dr. Howerde E. Sauderlich, formerly associate professor of animal husbandry at Iowa State University, has been appointed chief of the Chemistry Section of the United States Army Medical Research and Nutrition Laboratory at Fitzsimons Army Hos-

pital, Denver, Colo. He has travelled extensively in his research and teaching work. Among other honors he has received the Mead Johnson Company Award for Research on the vitamin B complex.

EARLY TABULATING MACHINE

Tabulating machines using punch cards were first suggested by Colonel J. S. Billings of the Army Medical Corps, in 1880. This Army surgeon was a real moving force in the development of the Army Medical Library which became in recent years the Armed Forces Medical Library and now is the National Library of Medicine.

BOOK AVAILABLE

Mosquitoes of Medical Importance is a 158-page book which contains 60 pictorial keys to aid persons having a minimum of training in the identification of mosquitoes having to do with diseases such as malaria, yellow fever, dengue, filariasis, and encephalitis.

Copies of this book may be obtained free from the Entomology Research Division, Agricultural Research Service, U. S. Department of Agriculture, Washington 25, D.C.

CARBON MONOXIDE

Carbon monoxide can be absorbed by the body tissues after death. Recent experiments at the Army Chemical Center, Maryland, have shown that dead animals that had no contact with carbon monoxide show the presence of that gas in their tissues when those animals are exposed to an explosive force and carbon monoxide.

Consequently the presence of carbon monoxide in a victim of a plane crash does not necessarily mean that he was overcome by that gas before the accident occurred. His tissues could have absorbed the gas after the accident.

ARMY STRENGTH

The Army strength as of October 31 was 872,485, an increase of 5,000 over the previous month's end.

WATER PURIFICATION UNIT

Fort Belvoir, Va. (ANS)—An air-droppable water purification unit, capable of processing 600 gallons per hour, has been developed by the Engineer Research and Development Labs. at Fort Belvoir, Va.

One of a family of three mobile units designed to purify radioactively contaminated as well as ordinary polluted water, the new unit would service soldiers in those areas not readily accessible to the truck-mounted units.

Sectionalized to facilitate handling and transport, the airborne unit includes a water treating section, a water filtering section, and operating accessories such as pumps, tanks, hose, generator and chemicals.

Navy

Surgeon General—Rear Adm. Bartholomew W. Hogan

Deputy Surgeon General—Rear Adm. Edward C. Kenny

TRACHOMA VACCINE

A vaccine which gives great promise in the prevention of trachoma has been developed through the cooperation of the U. S. Navy Medical Research Unit in Formosa and Republic of China doctors. Three years of work have already gone into the project and another year of investigation will be necessary to fully evaluate the vaccine.

The Chinese doctors associated with the project are: Y. F. Yang, Professor of Ophthalmology, National Taiwan University College of Medicine at Taipei, and S. P. Wang of Taipei; the American doctors are: J. T. Grayston and P. B. Johnston, both of Chicago, and R. L. Woolridge of Lake Bluff, Ill. The unit is commanded by Captain R. A. Phillips, Medical Corps of the U. S. Navy.

In the work several strains of the trachoma virus which were obtained from Chinese children were cultured on the chick embryo. From these the vaccine was made. After the experimentation with the native

monkeys, macaca cyclopis, the clinical investigation was made with human volunteers. The entire class of freshmen (150) at the National Defense Medical College in Taipei volunteered and ultimately received two doses of the vaccine without adverse reaction. The protective and curative value of the vaccine is now being determined with 450 Chinese children in a district along the west coast of central Taiwan.

JAPANESE INTERNS

Fourteen Japanese senior medical students will enter on a one-year internship at the U. S. Naval Hospital, Yokosuka, Japan, on April 1, at which time they will replace a class of Japanese interns who have completed their training. This excellent training under U. S. Navy physicians at a hospital commanded by Captain William N. New is evidence of the splended Japanese-American relations existing in that country. The training received is comparable to that in the best hospitals in the United States.

TO BUMED

Lt. Howard D. Cohn, MC, has been assigned to the Bureau of Medicine and Surgery for duty as Professional Assistant on the Physical Review Council.

PROJECT HOPE

Captain Paul E. Spangler, MC, USN, Retired, has been selected as Senior Medical Officer of Project HOPE, and will again sail the seas, this time on the U. S. Hospital Ship *Consolation*.

Dr. Spangler is the first physician to be chosen from more than 1,000 applicants. The permanent hospital staff aboard the ship will be made up of 15 physicians, 2 dentists, 20 nurses and about 20 auxiliary medical personnel. Every four months it is planned to send out 35 physicians on a rotating basis.

It is estimated that $3.5 million will be needed to operate the ship for a year and this money is being raised by voluntary contributions which may be sent to Project HOPE, P.O. Box 9808, Washington 15, D.C.

PERSONAL NOTES

Rear Admiral William M. Silliphant, MC, USN, Retired, recently assumed duties with the Cancer Research Institute, University of California Medical Center, San Francisco, California. Admiral Silliphant was formerly Director of the Armed Forces Institute of Pathology, Washington, D.C.

Captain J. M. Amberson, MC, USN, Retired, has joined the staff at Eaton Laboratories, Norwich, New York. There he will head the international clinical research program. Doctor Amberson was chief medical officer in charge of the "Passage to Freedom" in which over a million Vietnamese were evacuated, voluntarily, from communist-occupied territory after the fall of Dien Bien Phu.

Captain Norman Lee Barr, MC, USN, Retired, is now Chief of Space Environment and Life Sciences research for the Republic Aviation Corporation.

RETIRED

Rear Admiral Stanley W. Eaton, DC, was retired recently after 20 years active naval service. The advance in grade from Captain came upon his retirement. A native of Denver, he was commissioned in the Navy in 1937, saw action on Iwo Jima with the Fifth Marine Division and was awarded the Bronze Star for gallantry.

Captain Clyde H. Walsworth, DC, retired recently after more than 20 years active naval service. A graduate of the School of Dental Medicine, Tufts University in June 1937, he commenced his active naval duty in October 1939. He served aboard the USS LEXINGTON from November 1942 until May 1944.

Lieutenant Commanders Dan K. Ellis and Stewart V, Herrick, both of the Medical Service Corps of the Navy, and both of whom completed more than 30 years active naval service, were retired on December 1, 1959.

Air Force

Surgeon General—MAJ. GEN. OLIVER K. NIESS
Deputy Surg. Gen.—BRIG. GEN. JOHN K. CULLEN

RETIRED

Major General Wilford F. Hall, who was Surgeon, Air Materiel Command, Wright-Patterson Air Force Base, Ohio, recently retired after more than thirty years active military service. He has taken up his residence at Thorne Place, Bridgeport 5, Conn.

General Hall was succeeded by Brig. General L. Render Braswell who has been MATS Surgeon, with headquarters at Scott Air Force Base, Ill.

Public Health Service

Surgeon General—LEROY E. BURNEY, M.D.
Deputy Surg. Gen.—JOHN D. PORTERFIELD, M.D.

APPOINTMENT

Mr. George Bugbee, president of the Health Information Foundation of New York City, has been appointed a member of the Federal Hospital Council by Secretary of Health, Education, and Welfare Arthur S. Flemming.

The Council's main function is that of an advisory body to the Surgeon General of the Public Health Service on the administration of the Hill-Burton program. In addition, the Surgeon General consults with the Council in making grants for research in the development and use of hospital facilities, services and resources.

CANCER ADVISORY COMMITTEE

A 14-member Advisory Committee to the Cancer Control Program of the Public Health Service was recently announced by the Surgeon General.

The Cancer Control Program is under the direction of Dr. Lewis C. Robbins, Division of Special Health Services, Bureau of State Services. The Program is part of the cancer control and research activities of the Public Health Service, centered in the National Cancer Institute.

FOR NURSES

A *Bibliography on Cancer for Nurses* (PHS Publ. No. 687) is available from the Superintendent of Documents, Government Printing Office, Washington 25, D.C., at 20¢ per copy.

The publication includes lists of books and pamphlets; annotated audiovisual materials; teaching aids, such as prosthetic devices and other equipment for care of cancer patients; and annotated references on cancer of specific sites and nursing aspects of cancer.

PROFESSIONAL NURSE TRAINEESHIP PROGRAM

Two new publications, "Professional Nurse Traineeships," are available. Part I, *A Report of the National Conference to Evaluate Two Years of Training Grants for Professional Nurses,* and Part II. *Facts About the Nurse Supply and Educational Needs of Nurses,* may be obtained from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D.C. for 55¢.

RETIRED

Two Commissioned Officers of the Public Health Service recently retired: Medical Directors (equivalent to Captain in Navy) Travis P. Burroughs and James G. Townsend.

ALCOHOLISM

The importance of alcoholism in this country is pointed up by a research grant of $1,000,000 by the Public Health Service to support a five year study of the problem. The grant was made to the North American Association on Alcoholism Programs.

Veterans Administration

Chief Medical Director—WILLIAM S. MIDDLETON, M.D.
Deputy Chief Med. Dir.—R. A. WOLFORD, M.D.

SYMPOSIUM PRESENTED

The First Symposium on Oral Pigmentation was presented by the Dental Service of the Veterans Administration Hospital, Tuskegee, Alabama, on November 20, 1959. Lt. Colonel Clifton O. Dummett, USAF-Reserve (DC), Chief of the Dental Service of the hospital said, "The relative dearth of scientific information on this interesting subject has stimulated conjecture and superstition about incidence, etiology, significance and relatedness. In dental textbooks the subject has been treated either minimally or not at all."

Colonel Dummett was recently appointed Chairman of the Resolutions Committee, Dental Health Section of the American Public Health Association. He is serving as president, Medico-Dental Staff, and Secretary, Publication Committee, at the above hospital.

Miscellaneous

APPOINTED TO OFFICE

Major General George E. Armstrong, former Surgeon General of the Army, and now Director of the New York University-Bellevue Medical Center, was recently elected president of the National Resuscitation Society which maintains headquarters at 2 East 63rd Street, New York 21, N.Y.

Captain Robert V. Schulz, MC, USN, Head of the Audio-Visual Department, Bureau of Medicine and Surgery, Washington, D.C., was elected secretary of the Society.

GORGAS MEMORIAL INSTITUTE

At the recent annual meeting of the Gorgas Memorial Institute of Tropical and Preventive Medicine held in Washington, D.C., Dr. Walter A. Bloedorn, Professor Emeritus of Medicine and former Dean of the School of Medicine, George Washington University, was re-elected president.

The Executive Offices of the Institute are in Washington, D.C., and the research laboratory, known as the Gorgas Memorial Laboratory, is located in Panama City, Panama. This laboratory supported by an annual contribution from the United States Government is dedicated to research in the field of medicine and is a memorial to Major General William Crawford Gorgas who was chief medical officer of the Canal Zone during the days of construction of the Panama Canal. Later he became Surgeon General of the Army.

SURPLUS PROPERTY

Surplus property for which the Federal Government paid over $86 million was made available to the States for educational, public health and civil defense purposes during July, August, and September, 1959.

This program has been going on for some time. Property which has been transferred includes school and hospital sites; buildings suitable for college dormitory or faculty housing; motor vehicles; hospital, school and office furniture; hand and machine tools; motion picture projectors; laboratory equipment; and school office supplies.

The surplus property is transferred to the States where in turn it is allocated to institutions in those States. All contacts, therefore, must be made with a State Surplus Property Office.

UNFIT FOOD

Let us keep in mind that government agencies have responsibilities to the American people whether the individuals be among the high or low bracket salaries. In the case of the health of all of us we would be very critical if facts were not revealed when it is to our interest to know them.

The Food and Drug Administration is constantly on guard to keep shipments of food that is unfit for human consumption off our tables. During the month of October 1959 there were 418 tons of unfit foods removed from the market. This included frozen whole eggs, figs, rice, cocoa beans, and some other products that had been contaminated in storage. And this is not the entire story for there are products that are definitely "cheats." Some of these are short weight and others are deceptively packaged.

No reputable concern will take offense at this watchful eye by our government; but the the unscrupulous will.

FILM AVAILABLE

Staphylococcal Disease, Manifestation, Prevention and Control (F-343) is a 35 mm. color, silent Filmstrip with 36 frames and is available on a loan basis from the Communicable Disease Center, Public Health Service, Post Office Box 185, Chamblee, Georgia.

The drawings depict various clinical manifestations of hospital-acquired staphylococcal disease, the ways by which it is spread, and some of the techniques and methods useful in the control of infections. An Instructor's Guide is included with the film.

IDEAS WANTED

The National Inventors Council, U. S. Department of Commerce, Washington, D.C., has a list of over 300 problems the solutions for which may lie in the heads of the inventors of America. If you are interested in such problems as new propellants, elimination of water in the barrels of rifles and machine guns, etc., etc. you can obtain the list by writing to the above named Council. So, inventors, come to the foreground with your ideas!

POSTGRADUATE COURSES

The 13th Annual Postgraduate Course on *Diseases of the Chest* will be presented by the American College of Chest Physicians at Philadelphia, March 14-18. Further information may be obtained from the Executive Director, 112 East Chestnut Street, Chicago 11, Ill.

Clinical Physiology: Applications of Basic Physiology to Diagnostic and Therapeutic Problems will be offered as a postgraduate course during March and April by the New York University Post-Graduate Medical School. Further information may be obtained from the Office of the Dean, 550 First Ave., New York 16, N.Y.

MEETING

The American College of Allergists will hold its 16th Annual Meeting at the American Hotel, Bal Harbour, Miami Beach, Florida, March 2, 3, and 4.

MEETING

The First Annual Michigan Conference on Comparative Medicine will be held at East Lansing, Michigan, March 21-22. The program will deal with the basic and comparative aspects of CANCER. Inquiries should be addressed to: Clayton H. Wells, Conference Consultant, Kellogg Center for Continuing Education, Michigan State University, East Lansing, Mich.

An International Conference of Surgeons will be held in Tel Aviv and Jerusalem, Israel, May 21-23, following the 12th Biennial International Congress of International College of Surgeons in Rome, May 15-18. Further information may be obtained from the Secretary, International College of Surgeons, 1516 Lake Shore Drive, Chicago.

The American College of Chest Physicians will meet at Miami Beach, Florida, June 8-12, 1960.

The American Association of Medical Record Librarians will hold its next meeting October 10-13 at the Olympia Hotel, Seattle, Washington. At the last meeting held in Minneapolis an announcement was made that eligibility for the registration examination after January 1, *1965* will be on the basis of graduation from an approved school for medical record librarians. Correspondence to the Association should be addressed to: 840 North Lake Shore Drive, Chicago 11, Ill.

Honor Roll

Since the publication of our last list, the following sponsored one or more applicants for membership in the Association:

Lt. Col. Samuel Hurewitz
Dr. S. Gordden Link
Brig. Gen. James A. McCallam, USA, Ret.
Lt. Col. Edwin F. Poage, MSC
A. H. Apter, M.D.

John M. Campbell, M.D.
Col. Robert C. Kimberly, MC, Md. NG
Lt. Col. Edward F. Eppley, USAF, MSC
Lt. Col. Wistar L. Graham, USAF, MC

New Members

Capt. James A. Brimson, (MC) USN
Lt. Barney O. Green, MSC, USN
Lt. Col. George C. Smith, USAFR, MC
Fernando Cabieses, M.D.
Cdr. Newman A. Hoopingarner, MC, USN
Copt. Emmet T. Thorpe, MC, USAF-R
Frank R. Bustillo, D.D.S.
Ens. Robert W. Ginn, MSC, USN
Capt. Walter W. Larson, MC, USAF
LCdr. Stewart V. Herrick, MSC, USN
Cdr. Donald C. Kent, MC, USN
LCdr. Walter R. Cox, MSC, USN
LCdr. James R. Rankin, MSC, USN
Lt. James A. Spahn, Jr., MSC, USN
LCdr. George E. Cruft, MC, USN
Lt. Marvin Joel Brown, MSC, USN
Lt. Robert H. Donald, MC, USNR
Lt. Col. Irwin A. Grantz, MC, USAR, Ret.
LCdr. Theodore R. Brand, MC, USNR-R
Capt. R. E. Faucett, MC, USN
Maj. Nicholas R. Codik, MC, USAR
Cdr. Robert L. Fleck, MC, USN
Asst. Surg. Allan G. Hanretta, USPHS
Capt. Samuel H. Horton, MC, USN
Capt. Lewis L. Haynes, MC, USN
Med. Dir. G. P. Ferrazzano, USPHS
Maj. Bernice Britton Jones, USAF (NC)
Capt. Jack Tresser, DC, USAFR
R. W. Curtis, M.D.
Capt. Harlon Webster Harrison, MC, USNR
Lt. Richard K. Danis, MC, USNR
Lt. I. I. Kibbey, MC, USNR
Col. Roy Foster Roberts, MC, USA
Capt. W. E. Morris, MC, USN
Lt. Jerome Levy, MC, USN
Lt. Col. Joseph G. Friedrich, AUS, Ret.
Lt. Paul W. Mathews, Jr., MC, USNR
Lt. W. D. Latham, MC, USN
Col. Charles W. Gollehon, VC, USA
Edward L. Farrar, D.D.S.
John Andrew Scholl, M.D.
Lt. Vernon P. Perry, MSC, USN
Sr. Asst. Surg. Donald R. Weis, USPHS
Capt. Nicholas D. Lill, MC, USNR
S. A. Surg. Floyd B. Goffin, USPHS-R
Lt. Berkley L. Risl, MC, USN
Lt. J. E. Lange, MC, USN
Col. Lee Fulton, USAF-R, MC
Maj. F. Roger Wolfe, USAF-R, DC
Ens. Dean E. Lakey, MSC, USN
Col. Ruland Walcott Hussong, MC, USAR
Sr. Surg. John J. McCauley, USPHS
Lt. R. P. Johnson, USAR

Deaths

BURKE, Herbert J., Captain, MSC, U. S. Army, died at De Witt Army Hospital, Ft. Belvoir, Virginia, November 24, 1959, following a heart attack. He was 41.

A native of Belleville, Illinois, he entered the Army in 1941 as an enlisted man. In 1945, after being commissioned, he was assigned to the St. Louis Medical Depot, later serving in Alaska and Europe. In 1956 he was assigned to the Office of the Surgeon General where he was serving at the time of his heart attack. He is survived by his wife of 4070 Taney Avenue, Alexandria, Va.

KENNER, Albert W., Major General, Medical Corps, U. S. Army, Retired, died November 12, 1959 at Columbia Hospital, Washington, D.C., where he had been director for the past ten years. He was 69.

Doctor Kenner was a native of Holyoke, Mass. He graduated in pharmacy in 1910 from George Washington University and five years later he received his medical degree from the same university. He entered on active duty in the Army Medical Corps in October 1916. During World War II he was chief surgeon for General Patton's Western Task Force which landed at Casablanca, Morocco, on November 8, 1942. Later he served with Supreme Headquarters in England, and at the close of World War II was chief surgeon of the U. S. Forces in the European Theater.

General Kenner is survived by a son, Albert Jr., of 4925 Rodman St., NW., Washington D.C. Interment was in Arlington National Cemetery.

MARTIN, Clement L., M.D., died August 15, 1959 in the Presbyterian-St. Luke's Hospital, Chicago, at the age of 68.

Doctor Martin was a native of Omaha, Nebraska, and received his medical degree from Creighton University School of Medicine in Omaha in 1916. He was formerly a fellow in surgery at the Mayo Clinic, Rochester, Minn., where he was associate in the department of proctology. He was a founder member of the American Board of Proctology. For many years he was consulting proctologist at the Veterans Administration Hospital, Hines, Ill. He was a fellow of the American College of Surgeons, a member of the International College of Surgeons, and a specialist certified by the American Board of Surgery. He maintained his office at 55 E. Washington Street, Chicago, Ill.

McINTYRE, John R. Captain, Dental Corps, U. S. Navy, Retired, died on November 2, 1959. He was a native of Washington, D.C., and a graduate of Georgetown University in June 1928. He was retired in 1955 for physical disability.

MOURSUND, Walter H., Jr., Colonel, Medical Corps, U. S. Army, died at Walter Reed Army Medical Center, Washington, D.C., November 20, 1959, at the age of 50.

Doctor Moursund for the past two years had been Chief of the Army Physical Standards Office, Office of the Surgeon General. He was a native of Dallas, Texas, and in 1934 was awarded his doctor of Medicine degree from Baylor University College of Medicine, then at Dallas. He specialized in internal medicine before entering active military service in 1940. During World War II he was commanding officer of a medical group in the Pacific Theater, Deputy Surgeon, Central Pacific Base Command, acting surgeon and commanding officer of the headquarter command's Surgical Office, from April 1944 until August 1945. During the Korean Conflict he was commanding officer of the 141st General Hospital, serving in the battle area, a post he held from September 1950 until October 1951. Later he became Army Military Attache in London.

Colonel Moursund is survived by his wife who resides at 3712 King Street, Alexandria, Va. Interment was in Arlington National Cemetery.

NAGEL, Lester, R., Medical Director, U. S. Public Health Service, Retired, died October 14, 1959 at the age of 39. Dr. Nagel was a graduate of the University of Colorado School of Medicine (1949), and after graduation entered the U. S. Public Health Service. He was recently retired for physical disability. He is survived by his wife who resides at 128 San Miguel Drive, Arcadia, California.

PRATT, George O., Colonel, Medical Corps, U. S. Army Reserve, died August 26, 1959 at the age of 49.

Doctor Pratt was a native of Vermont. He received his medical degree from the Vermont College of Medicine in 1935. During World War II he served overseas in the European Theater as Commanding officer of the 70th Station Hospital, and in 1946 was released from active military duty with the rank of colonel. He became associated with the Veterans Administration and became manager of several hospitals. In 1946 he established the Pratt Clinic in Alburg, Vermont.

RITCHIE, Saul, Lt. Colonel, MC, AUS, died suddenly on November 19, 1959, following a heart attack after making his rounds at Benedictine Hospital, Kingston, New York. He was 58.

Doctor Ritchie was a fellow of the American College of Surgeons, a member of the International College of Surgeons, a member of the American Fracture Association, and a member of the Academy of Orthopedic Surgeons. His office was located at 82 Fair Street, Kingston, N.Y.

NEW BOOKS

Books may be ordered through this association.

Atlas of Roentgenographic Positions, Vinita Merrill, C. V. Mosby Co., St. Louis, Mo. Price $32.50 2 vols. set.

Les Destins de la Vie et de L'Homme, H. Laborit and P. Morand, Masson et Cie, Paris, France. Price 1,800 fr.

Maladies et Syndromes Rares Ou Peu Connus, A. Aimes, Masson et Cie, Paris, France. Price 3,000 fr.

Biophysical Science—A Study Program, Edited by J. L. Oncley, Editor-in-Chief, John Wiley & Sons, Inc., New York, N.Y. Price $6.50.

Analytical Cytology, Edited by Robert C. Mellors, M.D., Ph.D., McGraw-Hill Book Co., Inc., New York, N.Y. Price $17.50.

The Acute Medical Syndromes and Emergencies, Albert Salisbury Hyman, M.D., Landsberger Medical Books, Inc., New York, N.Y. Price $8.75.

Laboratory Tests in Common Use, Solomon Garb, M.D., Springer Publishing Co., Inc., New York, N.Y. Price $2.50.

Psychopathy, A Comparative Analysis of Clinical Pictures, Carl Frankenstein, Ph.D., Grune & Stratton, New York, N.Y. Price $6.75.

Gray's Anatomy—27th Ed. 100th Year, Lea & Febiger, Philadelphia, Pa. Price $17.50.

Observations on "Direct Analysis"—The Therapeutic Technique of Dr. John N. Rosen, Morris W. Brody, M.D., Vantage Press, Inc., New York, N.Y. Price $2.95.

Doctors and Patients, Edited by Noah D. Fibricant, M.D., Grune & Stratton, Inc. New York, N.Y. Price $5.25.

Progress in Neurology & Psychiatry, Vol. XIV, Edited by E. A. Spiegel, M.D., Grune & Stratton, Inc., New York, N.Y. Price $12.00.

Bacteriology for Students of Dental Surgery, R. B. Lucas, M.D. M.R.C.P., D.P.H. and Ivor R. H. Kramer, M.D.S., L.D.S.R.C.S., Little, Brown & Co., Boston, Mass. Price $6.00.

Symposium on Glaucoma, Editor William B. Clark, M.D., F.A.C.S., Associate Editor Joe M. Carmichael, M.S.J., C. V. Mosby Co., St. Louis, Mo. Price $13.50.

Physiology of the Eye, Francis Heed Adler, M.A., M.D., F.A.C.S., C. V. Mosby Co., St. Louis, Mo. Price $16.00.

The Power of Small States—Diplomacy in World War II, Annette Baker Fox, The University of Chicago Press, Chicago, Ill. Price $5.50.

Behavioral Change in the Clinic—A Systematic Approach, Gerald R. Pascal, Ph.D., Grune & Stratton, Inc., New York, N.Y. Price $4.75.

First Into Outer Space, Theodore J. Gordon and Julian Scheer, St. Martin's Press, New York, N.Y. Price $3.95.

Acute Pericarditis, David H. Spodick, M.D., Grune & Stratton, Inc., New York, N.Y. Price $6.50.

Christopher's Minor Surgery, Eighth Edition, Edited by Alton Ochsner, M.D., F.A.C.S., and Michael E. DeBakey, M.D., F.A.C.S., W. B. Saunders Co., Philadelphia, Pa. Price $10.50.

BOOK REVIEWS

CARCINOGENESIS. Mechanisms of Action. Ciba Foundation Symposium. Edited by G. E. Wolstenholme, O.B.E., M.B.; and Maeve O'Connor, B.A. 336 pp., illustrated. Little, Brown & Company, Boston. Price $9.50.

The Ciba Foundation owes its inception to the generosity of Ciba Limited of Basle, Switzerland. It offers accommodation to scientists from all over the world at its home in Portland Place, London, and under its auspices symposia on various topics have been held and the proceedings published. This volume contains the proceedings of a symposium on the mechanisms of action of various carcinogens. The symposium was held in 1958 preceding the VIIth International Cancer Congress. Professor A. Haddow of the Chester Beatty Research Institute in London acted as chairman of the meetings at which 19 papers were presented all relating to various carcinogens and carcinogenesis.

I. Hieger of the Chester Beatty Research Institute summarized the theories of carcinogenesis and his paper was followed by papers on such topics as the induction of tumors by the subcutaneous implantation of plastic films, the action of viruses, hormones and ionizing radiation as carcinogens, the immunological aspects of cancer, the induction of bladder tumors with aromatic amines, metals as carcinogens and the problem of testing preparations for carcinogenic properties in the chemical industry.

Authors include such scientists as I. Berenblum of Israel, F. Bielschowsky of Dunedin, J. Furth of Boston, C. Heidelberger of Madison, Wisconsin, M. H. Salaman of London and R. Latarjet of Paris.

Sir Macfarlane Burnet of Melbourne summarized the symposium and made the conclusion that in carcinogenesis somatic mutation plays a central role with the emergence of mutants whose dominance depends upon both clonal changes and the various types of morphogenetic control in the tissues concerned. There is no one basic mechanism of carcinogenesis but chemicals, radiations, viruses and hormones act in a variety of ways to influence cellular and internal environmental processes so as to release clones of cells into abnormal and destructive proliferative activity.

This book will be interesting reading to those studying the problem of cancer etiology.

COL. HUGH R. GILMORE, JR., USA, RET.

BIOLOGICAL PSYCHIATRY. Edited by Jules H. Masserman, M.D. 338 pp. Grune & Stratton, New York and London. Price $9.75.

This volume presents the 1958 Proceedings of the Society of Biological Psychiatry. Many authors and discussants contribute to the five portions of the book, which includes sections on: neuroanatomy and neurophysiology, clinical research, psychopharmacologic research, drugs in psychiatric therapy and evaluations and discussions.

These Proceedings dwell on basic research topics. Thus there is much material concerning research design, mechanism of action of drugs or procedures, biological factors entering into specific behavior patterns, sharper definition of terms and methodology, desire to know more about central nervous system function and emphasis on integrating theories of medical practice.

Many examples of these considerations could be cited but space permits mentioning only a few. Cole and Azima speak of the factors entering into research design. Pfeiffer and Klerman are among many who address themselves to the mechanism of action of drugs and present ingenious experiments. Fink makes a contribution not only to the understanding of the mechanism of action of electroconvulsive therapy but to cranio-cerebral trauma in general. Wortis and Rosenblatt discuss aspects of sexual behavior, drawing heavily on novel observations of animals. The unfinished work by Papez, now deceased, is his last step toward mapping out the function of the central nervous system. Masserman's presidential address pleas for the more holistic approach to medicine. Himwich gives evidence for a theory to differentiate energizers from anti-depressants. Marten's paper on ceruloplasmin and the discussion by Heath gives evidence of the international scope of these issues.

This book acquaints one with the frontier of knowledge in the field of biological psychiatry; the reader gains refreshing clarification and stimulation.

CHESTER M. PIERCE, M.D.

SURGERY OF THE COLON. By E. S. R. Hughes, M.D., Melbourne, Australia. 416 pp., illustrated. The Williams & Wilkins Co., Baltimore, exclusive U.S. agents. Price $12.50.

This book contains 24 chapters and is particularly unique because even though it is a surgical

text, it contains valuable chapters on the subjects of diarrhea and constipation. The reason for their inclusion, as stated in the preface by the author, is that persons dealing with surgical disease of the colon should be well grounded in the cause, course, and therapy of these two conditions. With the exception of Hirschsprung's Disease, which is not common in Australia, the field is adequately covered from a historical, anatomical, pathological, physiological, and technical standpoint. Many excellent photographs and charts are interposed throughout the text. The author's personal experiences with the various subjects in the field are presented at the end of each chapter. A more than adequate recent review of the literature is an integral part of the presented material. The section on bacteriology of the colon is timely and presents an intelligent discussion of the field.

The author has presented an excellent monograph on the subject of diseases of the colon. The information is presented to the point and in the tone and tenor of the medical writings of the English.

JOHN B. LOVETTE, M.D.

METALS AND ENGINEERING IN BONE AND JOINT SURGERY. By Charles O. Bechtol, M.D.; Albert B. Gerguson, Jr., M.D.; and Patrick G. Laing, M.B., F.R.C.S. 186 pp., illustrated. The Williams & Wilkins Company, Baltimore. Price $8.00.

The authors have accumulated much knowledge and experience relative to the use of metals for internal fixation or replacement of portions of bone in one long overdue text. They have brought order to the complex problems incident to the selection of the proper metal and type of appliance by the surgeon.

The engineering requirements have been evaluated both from the standpoint of the appliance and the host.

The historical use of various metals, their physiochemical response with the host, the types of metals available, their physical and chemical characteristics and the response of bone to them are adequately discussed and tabulated. The final chapter on the appropriate selection of appliances for a variety of therapeutic purposes, summarizes in a very practical manner the preceding information.

The book is well organized, the technical data is presented in clear easily readable form, and the book is well illustrated.

COL. JOSEPH W. BATCH, MC, USA

PREVENTIVE MEDICINE. Principles of Prevention in the Occurrence and Progression of Disease. Edited by: Herman E. Hilleboe, M.D. and Granville W. Larimore, M.D. 731 pp., illustrated. W. B. Saunders Company, Philadelphia and London. Price $12.00.

This book is an important contribution to modern literature on preventive medicine. Its arrangement is both unique and logical; the first part is devoted to prevention of the occurrence of disease through environmental hygiene, prophylactic measures against the communicable diseases, nutrition, etc.; the second part deals with prevention of progression of disease through health examinations, screening, rehabilitation, etc.; the third part describes official and voluntary supporting services for preventive medicine.

Among the newer facets of public health set forth are atomic warfare, ionizing radiation, air pollution, housing, alcoholism, and narcotics. About the only subject omitted is mental hygiene. Since separate books can be and have been written on each of the subjects in the 41 chapters, much of the material is necessarily concise, but most of it is adequate. Practically all of the 31 contributors not only are affiliated with the New York State Department of Health but also are teachers at local medical schools.

This well-printed and well-indexed book can be highly recommended as a text for medical and nursing schools, and as a valuable reference work for physicians in military and civil life.

COL. JAMES A. TOBEY, USA, RET.

TRAUMA. By Harrison L. McLaughlin, M.D. 784 pages, illustrated. W. B. Saunders Company, Philadelphia and London. Price $18.00.

This is a monumental work in which Dr. McLaughlin is not only author but editor. There is an imposing group of contributors and it is primarily a Columbia Presbyterian Medical Center of New York City and Faculty of College of Physicians and Surgeons at Columbia University presentation.

Local, regional and systemic responses to injury together with principles of treatment of trauma are included primarily in the first section. There is a very excellent discussion concerning repair and local events in fracture repair. The systemic response is rather thoroughly covered. This is a book which is well recommended for medical students, residents and also any practitioner who may have to cope with the great majority of civilian accidents. Thermal and vascular injuries are very well treated. The upper and lower extremities are taken up in separate sections. The head and special areas are handled in a masterly fashion.

The section dealing with treatment of fractures of the hip is excellent. The open reduction description for fractures of the femoral neck is beautifully presented.

W. COMPERE BASOM, M.D.

COLLECTED PAPERS OF THE MAYO CLINIC AND THE MAYO FOUNDATION. Vol. 50 -1958. Published

June 1959. W. B. Saunders Company, Philadelphia. Price $13.00.

This annual publication is already well known to the Medical Profession. The material represents the articles published from December 1, 1957 to November 30, 1958, inclusive, selected "primarily with the interests of the general practitioner, the general surgeon and the diagnostician in mind." In addition, "there is included material representative of the specialties and of the basic sciences in order to present adequately the work of the Mayo Clinic and Mayo Foundation."

The articles included, are listed under the following chapter headings:—"Cardiac Surgery and Extra Corporeal Circulation," "Alimentary Tract," "Genitourinary Diseases," "Ductless Glands," "Blood and Circulatory Organs," "Dermatology," "Head, Trunk and Extremities," "Thoras," "Brain, Spinal Cord and Nerves," "Radiology," "Physical Medicine and Rehabilitation," "Anesthesia, Gas and Intravenous Therapy," and "Miscellaneous." Under this last group, is a series of highly significant articles not carried elsewhere, i.e., "The diagnostic use of Radioactive Isotopes," "Fever of undetermined Origin," "The values of abdominal exploration," "Surgery of the Aged," "Treatment of the Child having Asthma," "Symptomatic Management of the 'Nervous' Patient," "Does the Executive Health Program Meet Its Objective?", "Antibiotic Therapy, Clinical Application of Available Agents," and "Papers by Title and Reference only."

Tables, photomicrographs, photographs and reproduction of X-ray films, where these pertain are included. A subjective index is found at the close.

This work is a valuable reference which is recommended to any physician engaged in the practice of medicine, the teacher and specialist alike.

COL. CHARLES R. MUELLER, USA, RET.

LOW INTENSITY RADIUM THERAPY. By Charles L. Martin, M.D., and James A. Martin, M.D. 257 pp., illustrated, 19 color plates. Little, Brown and Company, Boston and Toronto. Price $12.50.

The authors have used this text book as a means of presenting their vast clinical data in low intensity radium therapy. Except for a rather brief discussion of the historical background of radium therapy, the entire book deals with their opinions, techniques, and experiences.

The clinical material presented is good, and the extensive photographic documentation is impressive. The best results obtained are in the type of malignancies where some form of radiation therapy is the method of choice, skin, oral cavity, cervix, etc. Two types of malignancy, not ordinarily considered as suitable for radium therapy, are also discussed, cervical lymph node metastases and metastasic internal mammary lymph nodes due to cancer of the breast. In the former, the results are encouraging but not impressive, while the latter is still too recent for any statistical evaluation.

The authors are unashamed proponents of radium therapy and every radiotherapist as well as every physician interested in the treatment of malignancy should be aware of their opinions, experiences and comments.

MAJOR MICHAEL P. DACQUISTO, MC, USA